THE DRINK PROBLEM

EDITED BY
T. N. KELYNACK

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THE DRINK PROBLEM

THE DRINK PROBLEM

IN ITS MEDICO-SOCIOLOGICAL ASPECTS

BY

FOURTEEN MEDICAL AUTHORITIES

EDITED BY

T. N. KELYNACK, M.D., M.R.C.P.

HONORARY SECRETARY OF THE SOCIETY FOR THE STUDY OF INEBRIETY; EDITOR OF "THE BRITISH JOURNAL OF INEBRIETY"

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PREFACE

THE Drink Problem is essentially a medico-sociological problem. It is from this standpoint that the subject is viewed in this volume.

It is in great measure a pioneer work, and it may safely be claimed that as regards the multiplicity of its representative contributors as well as in several other respects it is unique.

An attempt has been made to deal with the subject throughout in a strictly scientific spirit, and to present the whole question in a comprehensive series of authoritative chapters, each being written by a specially qualified *medical* expert.

No one individual can be expected to have all-round knowledge on a subject so vast, intricate and far-reaching as alcoholism.

Each contributor has been allowed a free hand in the presentation of the particular subject allotted, and each writer is responsible only for the chapter contributed.

Although the work is divided into separate sections there is a degree of unity, and throughout it will be seen that there is an independence and an interaction.

The main purpose has been to present principles and indicate laws governing the drink problem.

Mere controversial topics, matters for academic discussion and all purely polemical points have as far as possible been excluded, or at least kept strictly within due limits.

The work is intended to be a practical contribution to the subject as studied in the light of the teaching of the science of to-day.

Many questions of much speculative interest are here raised, and the individual writers have not hesitated to express their opinions on certain matters concerning which there are differences of opinion, but throughout the volume a true scientific presentation has been aimed at, and it is hoped has been attained.

Without the willing assistance and valuable co-operation of the contributors to this collective study this work would have been impossible, and to one and all I desire to express my deep indebtedness.

In the formation of the index and in the preparation of the work for the press I have had the assistance of my wife.

T. N. KELYNACK

HARLEY STREET, W.

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THE DRINK PROBLEM

I

THE DRINK PROBLEM: AN INTRODUCTION

BY

THE EDITOR

The Medico-Sociological Study of the Drink Problem

THE drink problem rightly considered is essentially a medico-sociological one. It is but a part of that wider field of medical and sociological inquiry which deals with the bodily and mental well-being of the human unit, and the happiness and efficiency of the units when gathered into domestic, municipal and national groups.

The scientific spirit which is providing motive power to present-day movements for the development and protection of society and the elevation and restoration of the individual, demands that the evil which men term intemperance shall be investigated according to the rules of modern research, and shall be submitted to the stringent tests of accurate inquiry.

It is the purpose of this collection of communications to indicate the lines along which investigations into the problem of alcoholism may proceed; to summarise the more important facts hitherto established; and to enunciate the guiding principles which should direct us in further

inquiries and any attempts to apply our knowledge to measures of practical reform.

Science as a directing and controlling power is entering into every department of life's activities. By attacking the manifold problems which cluster around Man and his being, in accordance with the principles and practices of modern scientific research, fresh light is being thrown upon much which hitherto has been obscure or inexplicable. This is particularly the case in regard to alcoholism.

The drink problem is of great antiquity. It is only in comparatively recent times that there has been anything like a clear recognition of the importance and necessity of endeavouring to illumine its dark corners by the light of science. The widespread calamity resulting from intemperance long since stirred the emotions and energised the activities of thoughtful and patriotic enthusiasts both in this country and America. Amidst the apathy, ignorance and obstruction of the many, the reforming few may well be pardoned for initiating and carrying on an agitation which was not devoid of extravagances and fanatic zeal, and adopting educative and advocating legislative measures which to-day we have no difficulty in designating as crude and lacking in scientific precision.

In the past the outlook has been necessarily restricted, for knowledge has been limited and reliable information meagre in quantity and difficult to obtain. Empirics and fanatics have experimented in well-meaning ignorance. Co-ordination of thought and co-operation in effort have been conspicuous by their absence. Legislation has spasmodically sought to bind or restrict the drink evil, although knowing little as to its nature and origin, by measures the force and influence of which it had no opportunity of estimating. Moralists, psychologists and physicians have only too frequently confused and confounded the real issues by mere academic disputations and impracticable

enterprises. The dead hands of ignorance and authority have rested with crushing weight on mind and heart, and even still it is difficult to shake loose from the fetters which have for so long shackled thought and crippled action.

The scientific student and rational reformer of to-day cannot, however, afford to disregard the pioneers of the Temperance Movement.[1]

To fully understand the drink problem of to-day in all its bearings, it is necessary that we should study the evolution of the temperance movement. Only by clear vision of the path by which we have travelled can we wisely venture along the unbeaten track of the future. The road along which we have come bears the directing posts which alone can safely direct us on our future journey.

The problem is many-sided, and has at various times been approached by students of widely diverging opinions. Reformers of very different schools have suggested and, in many instances, have attempted to employ numberless would-be panaceas. Means and measures greatly differing have been advocated and tried. Most of the so-called preventive and remedial agencies which a much-harassed humanity has sought to apply have been found wanting; many have utterly failed; some have afforded but partial or palliative relief, while most have served merely as temporary expedients and short-lived alleviative influences rather than permanent protective and restorative forces.

The drink problem still remains unsolved, and continues to offer one of the most serious and baffling obstacles to

[1] Consult such works as :—

Gustafson, A. : "The Foundation of Death" (very full bibliography given). London, 1884.

Gourlay, W. : "National Temperance : A Jubilee Biograph of the National Temperance League". London, 1906.

Woolley, J. G., and Johnson, W. E. : "Temperance Progress in the Nineteenth Century". London, Toronto and Philadelphia, 1903.

man's up-climbing. It is for us to face the problem as it presents itself to-day, and to bring to bear on our quest the resources of modern methods of scientific inquiry.[1]

The Magnitude of the Problem

The drink problem is intricate and of far-extending magnitude. It has to deal with the most perplexing mysteries of human existence, and touches physiological and psychological matters, the real bearing of which we but dimly understand.

There are, however, certain well-attested facts which it is well should be borne in mind, as they have a very practical bearing on many points which will receive consideration in these pages.

In Great Britain and Ireland the drink bill amounts to something like £160,000,000. During the past five years there has been a steady decrease, amounting to £33,000,000 for this period. At present we use about fourteen gallons of absolute alcohol a year, per individual.

The cost per head of population works out at considerably over £4. The expenditure per family is estimated as over £21. Excluding non-drinking households, the probable expenditure per family would be—working classes over £17; other classes over £44. The deaths certified as due to intemperance have increased from 40 per million in 1855 to 113 per million in 1900. The total direct and indirect cost of our drink and our drinking is set down as more than £350,000,000.[2]

[1] Among periodical literature, in English, dealing with the scientific aspects of the problem see :—

The British Journal of Inebriety. Published Quarterly. London.

The American Quarterly Journal of Inebriety. Boston, U.S.A.

The Medical Temperance Review. Published Monthly. London.

[2] The above figures are stated in round numbers. For detailed statements consult the following :—

From the point of view of the worker "the trade" is not a desirable occupation. The brewer pays in wages only 7·5 per cent. out of each £100 value produced, as compared with 55·0 earned by the coal miner;[1] and "publicans and licensed victuallers are notoriously a short-lived class".[2]

The Evolution of the Alcoholic

The drink problem is a biological problem.[3] Its peculiarities and perplexities can only be discovered by studying it after the manner of the evolutionist. It is from this standpoint that Dr. Harry Campbell has viewed the subject in his contribution to this work.

Alcoholism is an ancient evil. In almost all ages known to history and among nearly every variety of people man has hankered after some agent which might increase his sense of well-being or ensure his detachment from the aches and pains incidental to human existence. Alcohol is an agent which from the very nature of its physiological action accomplishes this greatly desired end. Hence at all costs and in the face of almost insurmountable difficulties, ways and means have been discovered

Rowntree, Joseph, and Sherwell, Arthur: "The Temperance Problem and Social Reform". Seventh edition. London and New York, 1900.

Whittaker, Sir Thomas P.: "The Economic Aspect of the Drink Problem". Third Lees and Raper Memorial Lecture. London, 1902.

National Temperance League's Annuals for 1906 and 1907. Edited by J. T. Rae. London.

[1] Burns, John, M.P.: "Labour and Drink". Fifth Lees and Raper Memorial Lecture. London, 1904.

[2] Oliver, Professor Thomas: "Dangerous Trades. The Historical, Social and Legal Aspects of Industrial Occupations as affecting Health." London, 1902.

[3] Kelynack, T. N.: "The Alcohol Problem in its Biological Aspect". London, 1906.

whereby intoxicating alcoholic drinks might be prepared, stored, distributed and indulged in. From the remotest ages both civilised and savage races have made and consumed alcoholic beverages. They were used by the ancient Egyptians. The Greeks and Romans were thoroughly acquainted with all the manifestations of inebriety. The Germans and Gauls gained world-wide notoriety for their excesses. And in our own country from earliest days to latest times alcoholism has proved a common source of individual disaster and national difficulty. Indeed, almost every country seems to have its particular "taste" and form of drink. "In China, *manduring* and *fan-tsou;* in India, *arak;* in Thibet, *choug* and in Nubia, *couja* have been made for centuries by causing infusions of rice or other boiled cereals, mixed or not with honey and spices, to ferment. *Palm wine, pulqué,* of Mexico, *cachaea* of Brazil, *guaruzo* of South America, *mobi* of Virginia, etc., are prepared with the sap of the palm, American aloe, sugar cane, and decoctions of rice or potatoes. In Norway the sap of the birch is fermented; in the Alps an infusion of gentian roots; in the north of Europe they have made for a long time and still make *hydromel* from the honey of bees. Lastly, we know the *keptwi* of the Arabs and the *koumiss* of the Cossacks obtained from the fermented milk of the camel or mare. There is nothing, even to the *kangangtsyjen* made by the Tartars with lamb's flesh, mixed with cooked rice and other vegetables, and fermented, which is not used as an alcoholic drink."[1]

It has been contended that this almost universal practice of making and drinking fermented drinks indicates an instinctive need, and even suggests the possibility of their fulfilling some purpose in the evolution of the race.

[1] Gautier, A.: "Diet and Dietetics". English edition, translated by A. J. Rice, M.A., M.D. London, 1906.

It is clear that the drink problem is indissolubly bound up with the most intricate and mysterious elements of being. It is for the evolutionist to attempt to unfold an adequate explanation.

The Pathology of Alcoholism

A rational study of the drink problem must be based upon a sound pathological foundation. No exposition of the nature of intemperance and no forms of enterprise seeking its prevention and arrest can satisfy unless there is a clear recognition of the principles governing the morbid states which we conveniently group under the designation of alcoholism. The how and why of this morbid condition can be answered by scientific investigation. The whence and whither of the drunkard's progress may be traced with precision. Clinical experience, experimental research, and observations in the post-mortem room and pathological laboratory have revealed much concerning the physical basis of the evil. The farseeing medico-sociologist recognises the right of the pathologist to probe into this ill to the uttermost. There can be no sharply defined division into physical and moral, bodily and spiritual delinquencies and deficiences. The problem must be faced and dissected in all its complex intricacies, and to the pathologist it is given to lift the veil from those derangements and deteriorations, whether transitory or permanent, curable or irremediable, which form the material groundwork of the drink curse.

Professor Sims Woodhead has admirably indicated the standpoint of the scientific investigator in relation to the pathology of alcoholism, in his luminous chapter which demands serious study, forming as it does the basis on which much in our subsequent sections is built.

The Psychology of the Alcoholic

Man has ever been wont to seek out agents which might stimulate or soothe mental activities. Dr. Archdall Reid has spoken of the almost universal longing for alcohol as "natural instinct". This so-called natural craving for an agent which alters the relation of the ego to its environment cannot be denied, although it varies greatly in races, and manifests much difference of degree in individuals. It is essential to any serious inquiry into the problem of alcoholism that we closely analyse the psychology of the alcoholic. This has been ably done by Dr. Claye Shaw in Chapter IV. The paramount importance of clear views in regard to this department of our subject will be evident when we come to consider the almost insuperable difficulties of dealing effectively with the inebriate. This is particularly the case when dealing with the inebriate woman.[1]

No clear conception of "the public-house difficulty" can ever be arrived at either by temperance reformers or legislators until at least a working knowledge is secured as to the psychology of the public-house frequenter and the psychological nature of that which we glibly speak of as "temptation". Surely we need to recognise that in regard to impressions made upon the senses the physiological law regarding the "summation of stimuli" holds good.

No discussion of the much discussed "barmaid question" can be satisfactory which leaves out of count the immense importance of the psychological element.[2]

Indeed the whole alcohol problem needs to be viewed

[1] See Papers on Inebriety in Women. *The British Journal of Inebriety*, October, 1903.

[2] "Women as Barmaids." Published for the Joint Committee on the Employment of Barmaids. London, 1905.

from the standpoint of the psychologist, the investigator of mental activities in both their normal and morbid manifestations.

Alcoholism and Mental Disease

Alcohol is essentially a brain and nerve poison. It is mainly due to this fact that it has proved so disastrous an agent to the human race. The study of the action of alcohol on the nervous system, and especially of its influence in producing mental derangement, forms, therefore, one of the most essential parts of any serious consideration of the drink problem. Dr. Theo. Hyslop has very clearly indicated the part played by alcohol as a predisposing and determining agent in deterioration and overthrow of the mind.

It is exceedingly difficult to arrive at anything like an accurate numerical expression of the amount of insanity dependent on alcoholism and its associated conditions and concomitants. Dr. Hyslop's statement that "alcohol is either a direct or indirect factor in the causation of at least 50 per cent. of the cases of insanity" is certainly startling, but it is well to note that alienists in various parts of the country are testifying to the growing importance of alcohol as an ætiological agent in the production of mental instability, and as an influence initiating and maintaining morbid conditions of life and environment making for insanity.

Dr. T. S. Clouston claims that "alcoholic excess is the cause of about 20 per cent. of all the insanity in Great Britain and Ireland".[1]

Dr. Robert Jones, having analysed the returns of the London County Asylums, says that "21 per cent. among

[1] Clouston, T. S.: "The Hygiene of Mind". London, 1906.

the men and 11 per cent. among the women were ascertained to owe their insanity to drink alone ".[1]

But whatever may be the true statistical expression, it is indisputable that there is a close relationship between alcoholism and insanity. In some cases alcohol is merely a predisposer, in others it precipitates the mental overthrow, in not a few it leads to bodily and mental states or produces conditions of environment which conduce to the establishment of a morbid psychology; but in a considerable number inebriety must be considered as itself a conspicuous symptom and indeed a direct outcome of mental deficiency or derangement.[2]

Medico-Legal Relations of Alcoholism

Medical opinion and legal practice in regard to the management, punishment and control of the alcoholic have for long been, in great measure at least, not only at variance but in actual conflict. This has arisen from a difference in point of view, but the divergence has been widened by a neglect of those fundamental considerations concerning the ætiology and pathology of inebriety which should form the starting-point and reliable basis of all theoretical propositions and practical efforts directed to rational reform.[3]

Dr. Stanley Atkinson has very thoroughly summarised in Chapter VI. the difficulties of the past and the discrepancies of the present, and has laid down sound suggestions for a more reasonable forensic practice in the future in

[1] Jones, R.: "The Relation of Inebriety to Mental Diseases". *The British Journal of Inebriety*, July, 1904.

[2] "The Report of the Inspector under the Inebriates Acts, 1879 to 1900, for the year 1905." London, 1906.

[3] Kerr, Norman: "Inebriety: its Etiology, Pathology, Treatment and Jurisprudence". Second edition. London, 1889.

regard to medico-legal points touching inebriety and the inebriate.

With the coming of a more general recognition that certain forms of inebriety at least must be considered as definite diseased states, and should be dealt with accordingly, considerable advance has been made not only in legislative powers but in desirable measures for dealing with this unfortunate and misery-producing class of case. The means at present available are, however, all too meagre and restricted, and as we shall show later there is urgent need for much extension both in theoretical conceptions and therapeutic measures for the care and control of the inebriate.[1]

Alcohol and Public Health

As previously indicated the drink problem is really but a part of that greater medico-sociological problem which is concerned in the study of the nature, action and reaction of man and his environment, a study which engrosses all the energies of the hygienist and sanitarian.

In dealing with alcoholism in all its forms it is slowly being realised that as with other morbid conditions, the most rational and effective means of coping with the evil is to concentrate all available energy upon its prevention. The problem comes within the sphere of action of the medical officer of health, and must be dealt with by our public health service. So comparatively simple a procedure as the now widely adopted issue of official placards relative to the dangers incident to drinking is in itself a striking recognition of the principle that the alcohol problem is but a part of the larger public health problem.

[1] Kelynack, T. N.: Sections on "Inebriates" and "The Care of the Inebriate," in volumes of *The Annual Charities Register and Digest* for 1905 and 1906. London.

Dr. Arthur Newsholme has condensed a vast amount of information into his chapter, and has with lucidity and scientific precision defined the bearing of the drink question on individual efficiency and national progress. The view-points of the individual hygienist and the public sanitarian need to be clearly recognised and understood by the so-called temperance reformer and progressive statesman, for the most difficult and perplexing elements in the drink problem are essentially puzzles which State medicine must do its best to solve.

Alcohol and Life Assurance

Dr. Arthur Newsholme has touched on the very interesting and most practical matter of the relation of life assurance to indulgence in alcoholic drinks. It has seemed desirable that the subject, being of such far-reaching interest to the individual as well as importance to the State, should be dealt with by one who as a medical officer to an insurance office was able to consider it from the specialist's standpoint. Mr. W. McAdam Eccles furnishes a summary of life assurance experience which is of much suggestive value, and will prove of considerable service for purposes of reference.

Alcoholism in Relation to Women and Children

There are no aspects of the problem of greater significance than those which concern the effects of alcohol and alcoholism on women and children. The paramount importance of the subject is universally admitted. It is generally believed that female intemperance is on the increase, and certainly alcoholism among women is extremely prevalent often in forms most difficult to recognise and frequently overlooked by those in close association with the drinker. It is probably true that those gross

forms of drunkenness so realistically depicted by Hogarth[1] are much less common now than formerly, but in many parts of the country open and most revolting forms of inebriety among women still continue.

Dr. Arthur Shadwell has contended that "female drunkenness among the people has not increased but very distinctly diminished during the last twenty-five years".[2]

In a more recent work, however, Dr. Shadwell indicates that in this country "drunkenness and neglect are more frequent among women than anywhere else".[3] If this be so, and there is no reason to doubt it, the subject is at once seen to be one of the most pressing national importance.

In this collective series of studies we have been fortunate in obtaining the valuable assistance of one who as a woman and a medical expert is able to present the consideration of this all-important aspect of the problem with exceptional knowledge and rare scientific insight into its real meaning and influence on the life of the home and the upbuilding of the nation. Mrs. Scharlieb's contribution to this symposium is one of exceptional value, and merits thorough study.

It would seem that the pernicious influence of alcohol makes its mark at every age. As Dr. J. W. Ballantyne has recently put it, "Parental, and especially maternal, alcoholism of the kind to which the name of chronic

[1] In Sir Lauder Brunton's Essay on "Stimulants and Narcotics" (included in his work on "Disorders of Assimilation, Digestion, etc.". London, 1904) there are reproductions of Hogarth's "Gin Lane" and "Beer Street".

[2] Shadwell, Arthur, M.D.: "Drink, Temperance and Legislation". London, 1902.

[3] Shadwell, Arthur, M.D.: "Industrial Efficiency: A Comparative Study of Industrial Life in England, Germany and America". London, 1906.

drunkenness or persistent soaking is applied is the source of both ante-natal and post-natal mortality ".[1]

The researches of the late Dr. Matthews-Duncan,[2] Dr. W. C. Sullivan[3] and others[4] all go to show that in alcoholism we have a fruitful source of disaster to infant and child life.

Many are alcoholised before they are born, for as Dr. Archdall Reid puts it, " the embryo of a drunken mother is practically another drunken person ". Much of the appalling infantile mortality is the outcome of apathy, ignorance and neglect engendered by drink. Professor Bunge holds that the now all too common incapacity of women to suckle their children is oftentimes transmitted from mother to daughter, and in many instances is a resultant of alcoholism in the parents. This is a matter needing serious investigation in this country.[5] If substantiated it indicates a far-reaching action on Nature's part to eliminate the unfit. It would be an interesting in-

[1] See " Report of the Proceedings of the National Conference on Infantile Mortality held at Westminster, 13th and 14th June, 1906 ". Westminster, 1906.

[2] Matthews-Duncan : " On Alcoholism in Gynæcology and Obstetrics ". *Transactions, Edinburgh Obstetrical Society.* Vol. xiii., p. 105 1888.

[3] Sullivan, W. C. : *Journal of Mental Science.* Vol. xlv., p. 489. 1899.

[4] Consult also : Mackenzie, W. Leslie, M.D. : " The Medical Inspection of School Children ". Edinburgh, 1904. " The Report of the Proceedings of the Third International Congress for the Welfare and Protection of Children. London, 1902 ; and articles in *The British Journal of Inebriety,* October, 1903.

[5] Bunge : " Alcoholergiftung und Degeneration ". Leipsic, 1904. English translation, " Alcoholic Poisoning and Degeneration ". London, 1905. For references to same subject see : McCleary, G. F., M.D. : " Infantile Mortality and Infants' Milk Depots ". London, 1905. Woodhead, Professor G. Sims, M.D. : " Alcoholism in Relation to Infantile Mortality," in *Report of the Proceedings of the National Conference on Infantile Mortality.* Westminster, 1906.

quiry to see to what extent Jewish mothers. who almost the world over suckle their offspring, even in the greatest poverty and under the worst possible hygienic conditions, owe the retention of this natural function to the practically universal sobriety of their forebears.

The far-extending pernicious influence of alcohol working through the women and children of the nation cannot be over-estimated. Such a clear-visioned reformer as the Right Hon. John Burns, M.P., has recently summarised the situation with scientific accuracy and statesman-like insight:—

"Bad though liquor is to the child, penalising as it is to the father, alcohol in the mother, especially in the expectant mother, is one of the most serious tragedies that society is confronted with. It not only produces sterility, abortion, and premature aud still-births, but, what is worse and more pathetic to me, debility in the children who survive the alcoholic impregnation. There is the poignant tragedy of the might-have-been blighted by material indiscretion ere active life had come. Sadder, too, to me, is this fact, that children of alcoholic, or even drunken or heavy-drinking parents, are permanently handicapped in the race of life, probably for thirty, forty or fifty years, simply because of the transient folly and the temporary satisfaction of one of the most stupid and physically demoralising appetites that we as a nation are cursed with in nearly all classes of society."

The Criminology of Alcoholism

Social disorder is a universally recognised consequence of alcoholism. From the very nature of the action of alcohol on the higher centres of man's nervous system, dissolution of the most essential and yet the most recently acquired elements in his moral and intellectual constitution inevitably occurs, debasing him from the most

elevated standards of thought and conduct to the lowest depths of heedless bestiality. Criminality is necessarily therefore an outcome of many forms of alcoholism. The why and the wherefore of this is succinctly but forcibly expressed by Dr. W. C. Sullivan, who as a medical officer to one of H.M. Prisons, and an experienced investigator into the morbid psychology of crime, writes with the authority of one who deals with his subject as a practical expert. His conclusions afford strong confirmatory evidence as to the important part which drink plays as a crime-producing agent.

It is extremely difficult to arrive at an unequivocal statistical expression of drink-cursed crime.

As far back as 1834 a Select Committee of the House of Commons declared that to the traffic in intoxicants was due "the spread of crime in every shape and form". Later testimony[1] has affirmed the same contention.

[1] Consult—Rowntree, Joseph, and Sherwell, Arthur: "The Temperance Problem and Social Reform," 1900. Sherwell, Arthur: "The Drink Peril in Scotland," Edinburgh and London, 1903. The late R. B. Grindrod, M.D.: "The Nation's Vice," London, 1884. "Labour and Drink," Fifth Lees and Raper Memorial Lecture, by John Burns, M.P., London, 1904. Shadwell, Arthur: "Drink, Temperance and Legislation," London, 1902.

See following Official Reports :—

Select Committee (House of Commons) on Intoxication, 1834.
Select Committee (House of Commons) on Public-houses, 1854.
Select Committee (House of Commons) on Habitual Drinkers, 1872.
Select Committee (House of Lords) on Intemperance, 1876.
Select Committee (House of Commons) on British and Foreign Spirits, 1890.
Royal Commission on Sunday Closing, 1890.
Royal Commission on Liquor Licensing Laws, 1896.

Consult also :—

Judicial Statistics.
Reports of Commissioner of Metropolitan Police.
Reports of Inspector of Reformatories.

The Rev. Canon J. W. Horsley, formerly chaplain to H.M. Prison at Clerkenwell, estimates that 75 per cent. of crime as he has seen it in prison work may be "directly or indirectly attributed to intemperance," and so experienced an observer as Mr. Thomas Holmes endorses the statement that "75 per cent. of crime is in some way connected with drink".[1]

In passing it is well to note that it is now established that there is a close relationship between alcoholism and suicide.[2]

Alcoholism and Pauperism

That there is a very close connection between alcoholism and poverty is indisputable, but its extent and directness is difficult to express. Mr. Charles Booth thinks that "drink must be accounted the most prolific of all the causes [of pauperism]"; and adds very truly "it is the least necessary".

Dr. Ralph Crowley, who has had exceptional opportunities of forming a correct judgment as to the true nature of the relationship between intemperance and that degree of poverty which finds expression in what is termed pauperism, has collected and summarised practically all the data at present available regarding this most important section of our subject.

The Teaching of Temperance

The almost insuperable difficulty of restoring the confirmed drinker to habits of sobriety has compelled attention

[1] See Report of Discussion on "The Relations of Inebriety and Crime". *The British Journal of Inebriety*, October, 1906.

[2] Sullivan, W. C.: "Inebriety and Suicide". *The British Journal of Inebriety*, July, 1903.

Wilson, G. R.: "Drunkenness," p. 34. London, 1893.

to the rational and most desirable prophylactic measure of securing protection by adequate instruction in schools.

Thoughtful minds have come to the conclusion that the wisest course to arrest intemperance is to provide suitable teaching whereby the up-springing generations may be furnished with the principles on which sobriety must depend.[1]

Of recent years there has been a remarkable movement in favour of systematic teaching of hygiene and temperance in our public elementary schools. The growth and present expression of this demand has been well expressed by Dr. Claude Taylor, who has devoted much time and labour to the furthering of this most necessary advance in educational enterprise.

Alcohol and National Deterioration

The State inquiry[2] into influences impairing our nation's vitality has, as might have been expected, clearly demonstrated the important part played by drink.

The Report states that—

"Next to the urbanisation of the people, and intimately associated with it, as the outcome of many of the conditions it creates, the question of 'drink' occupies a prominent place among the causes of degeneration. The close connection between a craving for drink and bad housing, bad feeding, a polluted and depressing atmosphere, long hours of work in over-heated and often ill-ventilated rooms, only relieved by the excitements of town life, is too self-evident to need demonstration; nor, unfortunately, is the extent of the evil more open to dispute."

[1] For much useful historical information, see "The Jubilee of the Band of Hope Movement". Edited by Frederic Smith. London, 1897.

[2] "Report of the Inter-Departmental Committee on Physical Deterioration." London, 1904.

There is much reason to believe that our people are undergoing a profound psychological change,[1] and it is evident to all that remarkable alterations in the mode and manner of life are occurring. It would seem that while the conditions of our environment are such as arouse fresh longings and increase old proclivities for alcoholic indulgence, there is a greater susceptibility to react to the toxic action of alcohol and less power to withstand its ill effects.

Be that as it may, there is indisputable evidence that in alcohol we have an agent which is producing much individual inefficiency, and if not actually producing racial decadence is at all events hindering and hampering national progress.

It is to this aspect of the problem that Dr. Robert Jones has contributed a particularly suggestive and instructive section, which cannot but afford much food for thought and no little material for discussion.

Legislative Aspects of the Drink Problem

From earliest days the State has claimed and exercised the right to control what for convenience is termed "the liquor traffic". King Edgar, acting under the direction of Dunstan, seems to have been the first of our monarchs to attempt legislative restriction.[2]

A measure of "early closing" was provided for London as far back as the thirteenth century, when by the *Statuta Civitatis London*, passed in 1285, taverns were forbidden to remain open after curfew.[3]

[1] Hyslop, T. B.: "The Vitality of a Nation". *The British Journal of Inebriety*, April, 1906.

[2] French, V. R.: "Nineteen Centuries of Drink in England". Second edition. London, N.D.

[3] Shadwell, Arthur: "Drink, Temperance and Legislation". London, 1902.

The scanty and scattered records of the fourteenth and fifteenth centuries contain abundant references to manorial and municipal expedients for regulating the sale of alcoholic liquors and limiting the evil effects resulting therefrom.[1]

Interesting and instructive as the early legislative enactments for the restriction of the liquor traffic undoubtedly are to the serious student and rational reformer, the eighteenth and nineteenth centuries furnish the most important evidence of the evolution of organised thought and collective action in regard to this matter.[2]

Two centuries of experiments in licensing furnish abundant evidence of an attempt to attain a double purpose, the safeguarding of the people from the evils incident to intemperance, and the raising of revenue by the taxation of the causal factors, the intoxicating drinks.[3]

In studying the legislative aspect of the drink problem, it is most necessary to assume the spirit of the scientifically directed historian and to view the slow development of taxation and other forms of restriction of the liquor traffic from the standpoint of the evolutionist.[4]

It will then be at once apparent that much if not all of our legislative efforts have been little better than blind experiments, temporary expedients and compromises with selfish individual or vested interests. Throughout there has been a conspicuous lack of any clear recognition of scientific principles which might guide thought and govern action.

[1] Souttar, Robinson: "Alcohol: Its Place and Power in Legislation". London, 1904.

[2] See Appendices to Sixth Lees and Raper Memorial Lecture on "Law and the Liquor Traffic," by the late Sir Wilfrid Lawson, Bart., M.P. London, 1905.

[3] Webb, Sidney and Beatrice: "The History of Liquor Licensing in England principally from 1700 to 1830". London, 1903.

[4] Rowntree, Joseph, and Sherwell, Arthur: "The Taxation of the Liquor Trade," vol. i. London, 1906.

If legislative enactment must lag behind popular opinion, then it may well be that for some time to come mere expediency and compromise shall govern our advance. It is right, however, that statesmen should remember that with the growing recognition of medico-sociological truths, legislation must become a science as well as be practised as an art if the greatest good is to be secured for the greatest number.

Dr. Vickermann Rutherford, M.P., in Chapter XIV., has furnished a summary of the present position in facts and principles, and has attempted something in the nature of an anticipation. His contribution, judged from both medical and legislative standpoints, is rich in suggestions meriting serious consideration. Within the limited space at his disposal he has wisely not attempted anything like a complete exposition of the numerous much discussed and many most controversial subjects which call for thorough scrutiny, but he has indicated the essential need for an approach to each and all in a strictly scientific spirit.

In this necessarily brief introduction I have endeavoured to indicate that the great object of this work throughout is to show that all forms of constructive reform must be based upon a clear recognition of the action of Natural Law.

II

THE EVOLUTION OF THE ALCOHOLIC

BY

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The Nature of Alcohol

WHAT is Alcohol? Alcohol is a volatile liquid obtained by the fermentation of grape sugar, a process in which carbonic acid is formed as well, but the latter escapes for the most part as gas, only a small proportion remaining in solution. When, however, the alcoholic solution is bottled up before fermentation is complete, a large amount of the carbonic acid may be held in solution, and this escaping as bubbles when the pressure is removed, effervescence results.

The grape sugar from which alcohol is produced may be obtained from a variety of sources, and all sorts of different vegetable substances have been placed under contribution at one time or another in the manufacture of alcohol, among them honey, fruits (such as the grape, apple, pear), starchy substances which can readily be made to yield sugar (such as maize, barley, wheat, potatoes), and the sap of plants (such as the palm).

The Discovery of Alcohol

It was probably not until man had reached the agricultural period of his development, and began to cultivate the vegetable kingdom for food, that he first learnt to make alcohol. This conclusion is suggested by the fact that all pre-agricultural peoples, such as the Australian aborigines, the Californian Indians, the Andamanese, and the pigmy tribes of Africa, are ignorant of the process. These pre-agriculturists are the most primitive people living—naked, or all but naked, savages, subsisting by hunting and fishing, and on such sustenance as the uncultivated vegetable kingdom affords. They all practise cookery, and in view of their ignorance of alcohol, it is remarkable what ingenuity they display in the preparation of their vegetable food, knowing how to convert acrid and even poisonous substances into wholesome and palatable dishes. With a few insignificant exceptions they are ignorant of the use of metals; nor have they any pottery, and they are thus placed at a great disadvantage in the matter of vessels for holding water, for which purpose they employ such natural receptacles as bamboo canes, shells, or gourds, or, again, vessels made of skin, closely plaited reeds, bark, wood, or even stone. Of these the stone vessels alone are capable of resisting the action of fire; yet they very seldom make them, and still more seldom use them for placing on the fire. Consequently, they cannot boil water over the fire, and have to resort to the somewhat clumsy method of first heating stones and then immersing them in a vessel containing water.

Here, surely, we have a clue to the reason why man did not manufacture alcohol before the agricultural period. Doubtless the dearth of substances so suitable for fermentation as are barley, maize, and above all the grape, had something to do with it. There are, however, many un-

cultivated vegetable products capable of yielding alcohol. Honey also, an important article of diet among most of the pre-agriculturists, was available for the purpose, yielding as it does that once so popular beverage known as "mead". How came it, then, that man of the pre-agricultural period never learned to make alcohol? It was, I suggest, because he was unprovided with suitable vessels for holding the fermenting material. In order to manufacture alcohol in any quantity, large vessels, such as earthenware pans or jars, or wooden tubs are required; and while pre-agricultural man might have been able, with considerable difficulty, to brew himself small quantities by the aid of such vessels as he possessed—for some pre-agriculturists, such as the Australians, make wooden bowls of no mean size—it would have been impossible for him to brew it, or, having brewed it, to store it, in any but the smallest quantities. For this latter purpose earthenware jars, or wooden barrels, are essential, neither of which were forthcoming at this early epoch. It is true that alcohol can be stored in leathern bottles, and indeed wine was kept in this way until within quite recent times; it is also true that some of the pre-agriculturists employ vessels made of the skins of animals for holding water, but these are of the rudest description, and quite unfit for storing alcohol, and until the potter's art had come to his aid man was unable either to carry on the process of fermentation, or to store the finished product, on any but the smallest scale.

This question of the storage of alcohol is one of considerable interest, for without the means of storing it, it is practically impossible, even with a ready means of manufacturing large quantities, to keep a continuous supply at the disposal of a community.

The discovery of alcohol, then, dates from the beginning of the agricultural period. Now almost all the existing

primitive peoples of the world have reached this period, and they are acquainted with the art of pottery making, a knowledge which, as I suggest, was a necessary preliminary to the manufacture of alcohol. It will thus be seen that, with the exception of the few surviving pre-agricultural peoples, all so-called savages know how to make alcohol, a fact not, I think, generally recognised. The "red-skins" of North and South America, the negroes of the vast continent of Africa, the inhabitants of the multitudinous islands, large and small, of the Pacific, were all tillers of the soil and makers of pottery before they came in contact with the white man, and they almost all knew how to brew the fiery liquor. A few tribes here and there might have been ignorant of it, and even inhabitants over extensive areas, such as a large portion of New Guinea; but these are exceptions.

The Antiquity of Alcohol

Assuming that alcohol and agriculture made their appearance at about the same time, we may, by estimating the date at which man first began to cultivate the soil, form a rough estimate of the antiquity of alcohol.

We do not, of course, know when agriculture was first introduced, but probably we shall be well within the mark if we give it an antiquity of thirty thousand years. This conclusion is arrived at in the following way: The most ancient civilisation was the Egyptian, and recent investigations suggest that this civilisation dates back fifteen thousand years at least. But agriculture must have existed long anterior to the earliest Egyptian civilisation. There are two distinct stages in the history of agriculture —the migratory and the stationary. The first stage constitutes a step between the purely nomad life of the pre-agriculturist and the beginning of civilisation, *i.e.*, in it

the tribes lead a mixed nomad and agricultural life, cultivating a patch of land and abandoning it when it has yielded its harvest. All the primitive agricultural peoples of the world, save those inhabiting small islands where migration is impossible, are in this stage. Such is the case, for instance, with all, or practically all, the primitive negroes of Africa, and such was the case with most of the natives of America at the time of the Discovery—I say most, because some of them, *i.e.*, the Californians and the Tierra del Fuegians, were, and are to this day, pre-agriculturists, while the natives of Mexico, Central America and Peru had already reached the stage of fixed agriculture.

Now civilisation dates from the period of fixed agriculture. It is not possible for man to make any great headway while he is leading a wandering life; it was only when he had become rooted to the soil and had begun to cultivate cereals, whereby an abundance of nutritious food was placed at his disposal, that it was possible for that division of labour to take place which is essential to civilisation.

We are compelled, therefore, to assume that the ancient Egyptian civilisation was long antedated by a period of migratory agriculture, say for fifteen thousand years, and this would give to agriculture an antiquity of some thirty thousand years; and—if we assume that agriculture and alcohol made their appearance together—a like antiquity to alcohol. This may seem a great age, but a few thousand years cannot be regarded as long from the point of view of evolution, not long, that is, as compared with the total length of time man's evolution has occupied. It is probable that those ancestors of the ancient civilised Egyptians who first brewed alcohol were on much the same evolutionary level as the aboriginal Australians of to-day: *i.e.*, that they had reached (employing my method

of tabulation[1]) the 13·5th grade of evolution (man's ape-like ancestor belonging to the 5th grade, and the average European of to-day to the 15th). Assuming, then, that man had reached the 13·5th rung of his evolutionary ladder before he learned to brew alcohol, it is obvious that he had made considerable advance in his evolution before he had felt the stimulus of that most potent and alluring essence.

The Evolution of Alcoholic Drinks

The earliest alcoholic drinks were very different from those with which we are acquainted. There were no finely flavoured wines, liqueurs, or even malt liquors. They were for the most part unpleasant to the taste and highly diluted, so that to produce intoxication large quantities had to be taken. The first great advance in the manufacture of intoxicating drinks came with the cultivation of the vine and of cereals, from the former of which wine was made, and from the latter beer. It is not known which is the more ancient drink of the two, but that they both have a high antiquity is certain, for there can be no doubt that the Egyptians of the fourth dynasty, *i.e.*, 6,000 years ago, had four different kinds of wine, employing in their manufacture both the grape and the palm, and that they made from barley a species of beer which they flavoured with lupins and other vegetable substances. The Assyrians, whose civilisation was nearly as old as that of the Egyptians, made wine from the grape, fig, and palm, and the Hittites, inhabiting South Palestine, a people who were highly civilised when the Jews had scarcely emerged from barbarism, seem to have had very similar drinks. As for the Jews themselves, we know that as long back as 4,000 years Noah "planted a

[1] Campbell, H.: "The Evolution of Man's Diet". *The Lancet*, 1894.

vineyard"; and that the ancient Greeks were acquainted with wine many centuries before Christ is evident from the writings of Homer.

There is some difficulty in tracing the history of beer, owing to the loose way in which the word is often employed. It has been used to denote almost any (non-distilled) intoxicating drink obtained from the cereals—maize, barley, wheat, millet—and from such substances as manioc and the sweet potato. The ancient Peruvians made beer (*chica*) from maize; in India and Japan it has long been made from rice, and by the natives of India from many other cereals. Indeed, it would appear that the cereals were in the first instance cultivated as much for the purpose of brewing beer as for food.

The earlier kinds of beer were for the most part nauseous compounds. Many different substances were used to flavour them, but it was not until comparatively recent times that hops were employed for this purpose; these were not introduced into England until the fourteenth century.

Less important among ancient drinks than wine and beer were mead and cider, both of which were largely drunk by the ancient Britons in Cæsar's time, though mead was known at a much earlier date.

One of the greatest discoveries in connection with alcohol was the method of concentrating it by distillation. This method was first employed by Geber in the seventh or eighth century, and it was practised by the Arabian and Saracenic chemists. Spirit-drinking did not, however, come into vogue until several centuries after this; in our own country not before the Tudor period. Brandy, produced by the distillation of wine, was first made in the early part of the fourteenth century.

Intoxicating Drinks among Primitive Peoples

A study of the intoxicating drinks at present in use among primitive peoples is helpful in enabling us to form a notion of the nature of those first manufactured by man. It is probable that the preparation of the earliest alcoholic drinks was closely associated with that of other narcotising beverages. A few of these may be mentioned. The Californian Indians prepare a narcotic liquor by boiling the root of the Jamestown weed, and the Mohave Indians a similar drink by infusing the leaves and the root of a certain species of stramonium, just as, coming to a civilised people, the natives of India make an infusion of Indian hemp. The natives of some of the Pacific Islands prepare an intoxicating drink by chewing the kava root and spitting the fluid which accumulates in the mouth, and the aqueous rinsings of the mouth, into a receptacle where the product is allowed to ferment. In a somewhat similar way certain American tribes prepare a beverage by chewing the boiled manioc. Presumably the object of the chewing in these cases is the conversion of starch into fermentable sugar by the action of the saliva, though it seems doubtful whether the kava beverage contains any appreciable quantity of alcohol.

Primitive peoples obtained their alcohol from many different substances; indeed, comparing modern methods with those employed by primitive and ancient peoples, one is struck by the comparatively few substances which are now used in its manufacture. The sap of certain palms is widely employed for this purpose in South America, Africa, Asia and the Eastern and Pacific Islands; while the American Indians also employ, among other things, maize (from which their celebrated *chicka* is obtained), the *pulque aloe* (yielding the no less renowned *octli*), the prickly pear and honey.

Systematic Drunkenness the Product of Civilisation

Although man discovered alcohol, and thus the means of getting intoxicated, about the same time that he began to cultivate the soil, it is probable that persistent drunkenness was unknown before the period of fixed agriculture, that is to say before civilisation, as we understand the term, began in real earnest. Several considerations suggest this conclusion. Unable, as was early agricultural man, to brew alcohol in large quantities, or in any but a dilute form, and being, moreover, imperfectly provided with means of storing and transporting it, he had not the facilities for getting systematically intoxicated. Such drunkenness as was indulged in (and this observation applies to present-day early agriculturists wholly beyond the reach of civilisation) was essentially spasmodic, and connected generally with special observances of a ceremonial character, for each of which the supply of alcohol had to be specially brewed. There was, in short, no continuous, inexhaustible supply, such as is provided by our modern tavern; and without a continuous supply persistent intemperance is obviously impossible.

It is thus manifest that the means of systematic intemperance have been possessed longest by those peoples having the most ancient civilisations, and we have a fairly accurate knowledge of who these are. Fixed agriculture, and the civilisation to which it led, began in Northern Africa, the climate of which was at that remote time very different from what it is to-day, owing to the fact that the land was at a much higher elevation. As at the present time, it was connected in the East with Asia, but in the North it was also joined on, and at more than one point, to Southern Europe. We have thus a clue as to the direction in which civilisation travelled: starting in Egypt it spread

eastwards into Babylonia and Assyria, and northwards into Southern Europe.

When the ancient civilisations of Mexico, Peru, and Central America began we have no means of knowing, but probably long anterior to the civilisations of the northern parts of Europe and Asia.

Nothing better shows the influence of civilisation in favouring drunkenness than a comparison of the ancient Mexicans and Peruvians with the less civilised inhabitants of America at the time of the Discovery. While most of the latter knew how to obtain alcohol from such substances as maize, manioc, sweet potatoes, aloes, the cactus, and palm-sap, there is no evidence of chronic drunkenness ever having been rife among them. There is abundant evidence, on the other hand, of its prevalence among the ancient Mexicans and Peruvians, both of which peoples enacted special laws to hold it in check. Thus the Peruvians forbade the manufacture of a certain kind of strongly intoxicating beer, while the Mexican laws against drunkenness were most stringent; and, what is more, they appear to have been effective, for when their control was removed by the Spanish Conquest the people abandoned themselves to reckless intemperance. All this is very remarkable. Here we have nations, separated by thousands of miles from the Old World, evolving indigenous civilisations of their own, and not only acquainted with the use of alcohol, but subject to, and actually framing laws for the repression of, all those evils of intemperance with which we moderns are so familiar—nations whom we in our pride are apt to view with disdain from a pinnacle of lofty superiority.

We find a similar difference in respect of inebriety between the civilised and the nomadic peoples of Africa. While there is no evidence that the primitive negro inhabitants of this continent have ever been addicted to

chronic drunkenness, we have unimpeachable evidence that it was quite common at a remote period of Egyptian civilisation. As already observed, 6,000 years ago the Egyptians had several kinds of wine, as well as beer, and they have left abundant graphic representations of their drunken habits: we see them depicted in attitudes of helpless intoxication, or in the act of being carried home from their feasts, or indulging in inane drunken revelry, such as standing on their heads or otherwise "playing the fool"; and it is, moreover, clear from these delineations that the women were by no means exempt from the vice.

From this time onwards there is abundant evidence to show that intemperance was common among civilised peoples. That the Jews were not always strictly sober is shown by Biblical history. Again, we know from Homer that the ancient Greeks were familiar with wine many centuries before Christ; wine, indeed, was quite an ordinary drink with them, and the prevalence of inebriety among them is suggested by the fact that the prospect of a Hereafter consisting of an "everlasting drunken orgy" was held out as the fairest award of virtue.

We have but scanty knowledge of the inhabitants of Northern and Western Europe before the Christian era, but that drunkenness was rife in the West of Europe in the first century is evident from a passage in the elder Pliny in which he exclaims against the "drunkenness of the whole world," adding that Western nations intoxicate themselves with "moistened grain"; and the conception of Odin's paradise, in which ale was quaffed in large goblets until a condition of celestial intoxication was engendered, points in the same direction.

Evidence of Inebriety in Great Britain Since Cæsar's Invasion

According to Diodorus, who lived at the time of Julius Cæsar, the Britons were then given to drunkenness, and he declares that "when intoxicated they never fail to quarrel". But nothing better shows the prevalence of drunkenness in Britain from the time of the introduction of Christianity till the Reformation than the habits of the clergy. Thus we find Boniface, in the seventh century, not only upbraiding certain bishops for neglecting to check intemperance, but for "drinking to excess themselves and forcing others to get drunk". This drunkenness of the clergy was the object of special condemnation by King Edgar in the tenth century. In the early part of the following century Anselm decreed that "priests go not to drinking bouts nor drink to pegs" (*ad pinnas*); and again in the thirteenth century Archbishop Peckham forbade the clergy to keep or frequent taverns; yet, among the clerical orders which existed at this time was one actually requiring its brethren "to drink well at their meat, and then afterwards until supper; and afterwards at the collation each must have a piece of candle as long as the arm below the elbow, and as long as there shall remain a morsel of candle the brethren must continue their drinking". Much later, when Henry VIII. ordered an investigation into the condition of the monasteries, he found drunkenness rampant among their inmates. Nor was there much improvement after the Reformation, and among the injunctions of Elizabeth we find one forbidding the clergy to "haunt ale-houses or taverns".

Such being the habits of the clergy it would be surprising if a better condition of things prevailed among other sections of the community, and indeed there is abundant evidence that inordinate drinking was fairly

general. On great occasions the people freely abandoned themselves to drunkenness, the means for which were readily placed within their reach. Thus we are told that the "conduits ran with wine" when Edward I. returned to London from the Holy Land, and that when Anne Boleyn made her entry into the City of London "a fountain of Rhenish Wine ran copiously until night time"; and, again, that at the restoration of Charles II. the conduits flowed with a "variety of delicious wines". Thomas Young, writing in 1617, complains that "drunkennesse is professed with us as a liberall arte and science," and that men will actually drink for a wager; and Burton in 1621 writes: "'Tis now come to that pass, that he is no gentleman, a very milk-sop, that will not drink, fit for no company". A Frenchman observes in a letter written during the Protectorate: "There is within this City (London) and all the towns of England which I have passed through, so prodigious a number of houses where they sell a certain drink called ale, that I think a good half of the inhabitants may be denominated ale-house keepers . . . some of them having built fair houses, and purchased those gentlemen out of their possessions, who have ruined themselves by the base and dishonourable vice of inebriety". Pepys in his *Diary* (1662-63) describes how when he dined at the "Chirurgeons' Hall" the King's health was drunk out of a gilt cup—the gift of Henry VIII.—"with bells hanging at it, which every man is to ring by shaking after he has drunk up the whole cup".

French observes that in the reign of William and Mary intemperance raged "from the highest to the lowest," and Lord Lonsdale asserted in the House of Lords in 1743 that "In every part of this great metropolis, whoever shall pass along the streets, will find wretchedness stretched upon the pavement, insensible and motionless, and only removed by the charity of passengers from the danger of

being crushed by carriages, or trampled by horses, or strangled with filth in the common sewers ".

George Pryme, who went to Cambridge in 1799, refers to the hard drinking which then prevailed at that university. The undergraduates endeavoured to make one another drunk, and took " a pride in being able to resist the effects of the wine ".

Charles Knight, describing a London Christmas in 1824, writes: " In every broad thoroughfare, and in every close alley, there was drunkenness abroad; not shamefaced drunkenness, creeping in maudlin helplessness to its home by the side of the scolding wife, but rampant, insolent, outrageous drunkenness ".

Similar passages might be quoted *ad infinitum*, but the above serve our purpose.

The Attraction of Alcohol

Now, what is the nature of the peculiar attraction which alcohol exercises over mankind?

People are attracted to alcoholic drinks partly by their agreeable flavour, partly in the hope to allay thirst, partly —it may be—for their revivifying effects (for although the vigorously well are not stimulated by alcohol in the sense of being rendered more efficient, it may temporarily stimulate flagging energies), and, again, partly to dispel mental depression, on the principle of " keeping spirits up by pouring spirits down ". There can be no doubt, however, that neither the gratification of the palate, the quenching of thirst, the reviving of failing energy, nor the removal of gloom constitutes the essential attraction of alcoholic drinks. Although the pleasant flavour of many of them adds to their attractiveness, it cannot be an essential part of it, for without the alcohol they would, one and all, cease to attract, and it is moreover evident that the earliest alco-

holic drinks must have attracted man *in spite of* their crudeness and unpalatableness; although, again, it is true that some alcoholic drinks, such as beer, the lighter wines, and freely diluted spirits, may, owing to the large amount of water which they contain, be capable of allaying thirst, no one would dream of taking strong alcohol for this purpose; nor can the popularity of alcohol be due to its power of stimulating failing energies or of dispelling gloom, for we find whole communities of vigorously healthy people (*e.g.*, savages) flying to alcohol as the moth to the flame, and abandoning themselves to excess when a plenteous supply of the magic liquor is placed in their way.

Clearly, then, the essential factor in the attractiveness of alcoholic drinks is their power to intoxicate and narcotise, a conclusion which is further suggested by the fact that mankind shows a disposition to indulge in a variety of intoxicant and narcotic substances (such as opium, hasheesh) which have nothing but their drug effects to recommend them.

We must conclude, therefore, that man has an inborn liking for intoxicants. This liking is found not only in primitive peoples living under primitive conditions, but in civilised man also, though probably, as we shall see, in a less intense form. With him, however, other factors besides the desire for intoxication, such as ill-health and mental depression—factors begotten of civilisation—come into operation.

How are we to account for this natural liking for intoxicants and narcotics? We may speak of it as innate, because primitive man, and very often civilised man also, takes to alcohol as naturally as a duck to water, so naturally, indeed, that Archdall Reid refers to the liking for it as "instinctive".[1] Doubtless among the civilised, in whom

[1] Reid, G. Archdall: "Alcoholism—A Study in Heredity". London, 1901.

the liking is less clamant than among primitive peoples, a shorter or longer term of probation is generally needed to develop it, but among some of them, and among all, or most, savages, it appears to be strong from the very beginning.

Reid regards the inborn liking for alcohol as a "by-product"—an accidental accompaniment, of evolution. But even so, its occurrence may admit of an explanation, and I venture to put forward the following: The liquid portion of the blood, or blood plasma, contains not only nutrient materials and useless waste products, but also substances (*hormones*) whose function it is to arouse special forms of activity. Our knowledge of the action of these substances on the nervous system is at present limited, but I believe it will be found that they play a much larger part in regulating nerve-function than has hitherto been suspected. It is probable that some of them, which we may speak of as "nervine stimulants," exercise a tonic, stimulating, or even slightly intoxicating effect upon the brain, much in the same way as strychnine and alcohol do. Such nervine stimulants have a twofold origin. They may either (*a*) be ingested with the food, which is (unconsciously) selected with due regard to its stimulating properties, the tendency generally being to choose stimulating rather than bland, non-stimulating foods; or (*b*) they may be engendered within the organism, either in the alimentary canal as by-products of the digestive process, or in the tissues as a result of their vital activities.

Besides these nervine stimulants the plasma also contains substances having an opposite or depressing effect, giving rise to such symptoms as mental depression, irritability and lassitude. These substances, which we may designate "nervine depressants," are probably of the nature of excreta, that is to say, substances which need to be removed by the excretory organs. That the symptoms

referred to may be produced by excreta is shown by the fact that they can often be removed by the old-fashioned blue pill and black draught, which manifestly operate by purging the blood of poisonous substances. This is freely admitted, and it is somewhat strange that the possibility of the blood's normally containing a class of substances having an entirely opposite effect has been overlooked. That it does actually contain such substances I have no doubt, but for the arguments in favour of this conclusion I must refer the reader to another place.[1]

We may think of the brain, then, as an instrument played upon by a number of chemical agencies, which may be roughly grouped into stimulants and depressants, and we may conceive of this mind-instrument as yielding music which is bright or dismal according as the one or other group of agencies predominates.

If we assume that the blood normally contains mildly intoxicating substances we can explain the readiness with which man takes to a substance which, like them, tends to call forth a sense of exuberant well-being and joyous emotion—to beget, in short, a sense of happiness, the end and aim of all human endeavour—that to the attainment of which all the efforts of poor, striving men are, consciously or unconsciously, directed. On the assumption that the sense of material well-being is largely dependent upon the presence in the blood of mildly intoxicating substances, is it any wonder that man having discovered an essence capable of producing a kindred effect, and all ignorant of the dangers which lurk within its subtle charm, should fly to it with the blind impetuosity of the moth rushing on the destroying flame?

While thus seeking to offer a physiological explanation of man's love of alcohol, it must not be thought that I am

[1] See the writer's paper: "The Alcoholic Craving". *The British Journal of Inebriety*, July, 1906.

advancing a physiological justification for taking it, as thus: because the blood normally contains stimulating substances which engender feelings of health and happiness, therefore man stands in need of alcohol and is physiologically justified in resorting to it. Quite the contrary. The normal nervine stimulants are of such a nature, and are present in such quantities, as to tend rather to the maintenance of health than the destruction of it; whereas alcoholic drinks are apt to be harmful even when taken in moderation, and are, moreover, but too often imbibed in quantities which are unmistakably poisonous. It is even possible that if the normal stimulants of the blood were in excess they would exercise a harmful influence.

The question may, I think, legitimately be raised whether we may on similar lines explain those cases of impulsive craving which are sometimes the most obtrusive manifestations of the congenital neurotic. Is it possible that the craving in these cases is due to the deficiency in the blood of its normal allowance of stimulants? Be this as it may, there is, in my mind, no doubt that the nervous diathesis depends essentially upon the composition of the blood: an individual is nervously disposed because his blood makes him so.

The Influence of Natural Selection on the Liking for Alcohol

Inasmuch as drunkenness leads to disease and premature death, not only in the case of the drinkers themselves but of their offspring also, and inasmuch as an innate liking for alcohol plays a large part in determining whether an individual shall become a drunkard or not, it follows that the liking for drink causes an elimination of those who are naturally most disposed, and a survival of those least disposed, to it. In other words, the prevalence of drunken-

ness in a community for several successive generations tends to make that community innately more sober.

We have seen that chronic drunkenness dates from the advent of civilisation, and consequently it is only since then that the elimination of the drunkard has taken place to any great extent. Among most civilised communities this elimination has been very drastic, and has, in the language of Dr. Archdall Reid, led to an "evolution against alcohol," *i.e.*, an evolution in the power of resisting it.[1]

The resistance to alcohol which an individual offers depends upon his ability (1) to resist its evil effects after it has been imbibed, and (2) to abstain from an excess of it.

1. Individuals differ considerably in the way they respond to alcohol: a quantity which will make one person downright ill may have little or no apparent deleterious effect upon another, for it is certain that some people, especially when leading an active, open-air life, can for years indulge in a goodly quantity without apparent hurt, though they doubtless suffer some evil. It might be suggested that this ability to tolerate alcohol has evolved through the elimination of those who are highly vulnerable to its action and whose efficiency in the struggle for existence is lessened by even small quantities of it, and it is conceivable that in this way a type may be evolving whose tissues are becoming less and less vulnerable to it. It must not, however, be forgotten that great vulnerability to alcohol may be a cause of indifference to it. Those who by moderate indulgence in it are made headachy, irritable, and dyspeptic are likely to avoid it, and thus to escape elimination through drunkenness; and in this way a type may be evolving with whom alcohol, even in moderate quantities, may disagree and for whom it no longer possesses its pristine charm.

[1] Reid, G. Archdall: "The Present Evolution of Man". London, 1896.

2. The ability to abstain from excess of alcohol depends either upon an indifference to its allurements, or the possession of will-power capable of resisting them; the greater that indifference or the greater that will-power, the less is the individual likely to become intemperate.

Of these two resisting factors indifference is the more effective. The will is only a secondary factor in determining whether an individual shall be drunk or sober; a weak-willed person who is indifferent to alcohol is much less likely to drift into intemperance than a strong-willed person who is highly susceptible to its attractions. I do not wish to underestimate the influence of will-power in this connection; a strong will may assuredly overcome a strong natural bias to inebriety, and many a man would undoubtedly drift into intemperance but for the exercise of great self-control. Where will-power is most effective is in preventing the hitherto sober man from becoming intemperate; but once habits of intemperance have been contracted, the will is too often powerless to oppose an effective resistance. Only exceptionally does a chronic drunkard become sober through sheer strength of will. Experience shows that even if he can be prevailed upon to abandon drink for a time there is great danger of a relapse, and though such relapses are sometimes due to an irresistible craving, they often arise from weakness of will. Thus a man may be induced to abstain for a time and all craving may have disappeared after the first week, but one day he is asked by a friend "to have a glass," and he yields from simple weakness of will, and then the mischief is done, for that one glass rekindles all the old desire. We are apt to upbraid these people for being weak-willed, but it must not be forgotten that chronic drunkenness weakens will-power, and it is largely for this reason that so little reliance can be placed on will-power as a factor in reforming the drunkard.

We arrive, then, at the conclusion that whatever adaptation to alcohol has taken place in civilised communities, has essentially been by the evolution of a type of individual capable of resisting its allurements, and that the ability to do this depends rather upon indifference to those allurements than upon strength of will, character, or whatever we may choose to call it. But be the nature of the adaptation what it may, there can, I think, be little doubt that it has been taking place. Adaptation to what may be termed the moral environment, of which alcohol may be considered a part, has been steadily going on since man first emerged from a lowlier being. From the most primitive times he has had to adapt himself to this moral environment. Even savages have some kind of moral code and modes of enforcing it, and there can be no doubt that from the earliest period of our human ancestry there has been steadily taking place an elimination of those least amenable, and a survival of those most amenable, to social law. Among civilised communities this process is going on with great rapidity. Many moral requirements are exacted of the modern civilised being, who, if he do not run fairly well in his moral harness, tends to go under. The three great essentials required of him are industry, honesty and sobriety; the lazy, the dishonest, and the drunken have from the very dawn of civilisation left fewer progeny than the industrious, honest, and sober, and thus among civilised communities the evolution of these latter qualities is proceeding apace.

If an adaptation to alcohol has been taking place in the way described we should expect those communities which for the greatest number of consecutive generations have had opportunities for chronic drunkenness—or, what comes to the same thing, those possessing the most ancient civilisations—to be most disposed to temperance. Whether this *a priori* argument is borne out *a posteriori*

I shall not stop to consider here, for, apart from the difficulty of obtaining reliable statistics, the question is complicated by the influence of climate, custom, and religion. There seems, however, to be little doubt that while savages whose ancestry have had no opportunities for chronic drunkenness succumb to drink when opportunity offers with a readiness which is appalling, the Jews, who have for some thousands of years been a civilised race, are temperate all the world over.

There are many other factors predisposing to intemperance besides inborn liking for alcohol and weakness of will. Some of these we will now consider.

Facilities for Obtaining Alcohol

That intemperance increases with the readiness with which alcohol can be obtained is amply borne out by observation. As I have more than once urged, pre-civilised peoples were unable to get chronically drunk, owing to their inadequate means of manufacturing, storing, and distributing alcohol. But with civilisation came opportunities for chronic drunkenness, and these were all too readily seized. Nothing better shows the relation between drunkenness and the opportunity to get drunk, than the influence of certain occupations, such as that of publican and potman. The same truth is evinced by the effect of religion and legislation, both of which have, in certain instances at least, succeeded in promoting sobriety. Millions of Mahomedans have for generations been kept sober by religious mandate, a mandate which has led to the entire banishment of alcohol from their midst, and our own past history affords many instances of the influence of judicious legislation in favouring temperance, and of injudicious legislation in promoting intemperance.

Scarcely any steps seem to have been taken before the

time of Edward VI. for preventing drunkenness either by regulating the sale of alcohol, or by punishing the drunkard. The government's chief care seems rather to have been to keep down the price of alcohol by limiting the charges made by the vendor. Thus in 1277 four gallons of the best beer were to cost only 1d., and in Henry V.'s reign the wines of Gascony and Guienne were not to be sold above 8d. the gallon; again, in Charles II.'s reign it was provided that no Spanish wine should be sold retail for more than 1s. 6d. the quart, and that the price of French wines should be limited to 8d. the quart, and that of Rhenish wines to 1s.

Some attempts had, however, early been made to limit the number of taverns. Thus in the tenth century King Edgar decreed that no village should have more than one, and with a view to prevent drunkenness he ordered, somewhat naïvely, pins, or nails, to be fastened into drinking vessels at definite intervals, any one drinking beyond one of these marks being liable to severe punishment, a plan which in later times had the very opposite effect of promoting drunkenness, for it became the custom for the cup to go round and round and for each person to drink to a pin—which was half a pint. There was to be no shirking; each one was to take his full share like a true sportsman! This was called pin-drinking and gave rise to the common slang, "He is as merry as a pin".

Probably other attempts to keep down the number of public-houses were made during the succeeding centuries, though I have obtained no record of any until 1496, when Justices of the Peace were empowered to prohibit "Ale-selling in townes and places where they shall think convenyent, and to take suertie of the keepers of ale-houses of their gode behavyng". But in spite of such spasmodic attempts to limit ale-shops, there can be no doubt that facilities for drunkenness were abundant in those times. Not the least of these was that afforded by the small

amount of duty, or excise on alcohol. Though a moderate duty had been put upon imported wines and spirits, there was no excise until 1643, when it was first laid upon "makers and vendors of ale, beer, cider and perry". In 1689 the Government prohibited the importation of spirits, and threw open the distillery trade to any one who would pay the very limited excise, the effect of which was greatly to increase spirit-drinking, and in consequence the average yield of the British distilleries which in 1684 was 527,000 gallons, had in 1727 risen to 3,630,000 gallons! Retailers of gin announced in large letters that their customers could be made "drunk for a penny, dead drunk for twopence, and have straw for nothing". At the same time large quantities of rum, brandy, and hollands were smuggled from the Channel Islands, so that beer came to be superseded almost entirely by spirits. To prevent this excessive spirit-drinking, in George II.'s reign a heavy duty was placed on spirits, but unavailingly, for coloured spirits were sold by hawkers in large quantities under feigned names. The act was therefore repealed, and a penalty of £10 imposed upon the retail sale of spirits *unless sold in dwelling houses*, "by which masterpiece of wisdom," as Dr. French[1] observes, "every householder was potentially converted into a publican," and "intemperance spread like a plague" in consequence. The effect of the famous Gin Act (1736) was to send up the consumption of spirits from 13,050,000 to 19,000,000 gallons, but between 1760 and 1782 it fell again to an average of 4,000,000 as the result of prohibiting the distillation from grain, malt, or flour.

But there is no need to pursue this point farther. Enough has been said to show that the consumption of alcohol can be greatly influenced by legislative enactment.

[1] French, V. R.: "Nineteen Centuries of Drink in England". London, N.D.

The Attractiveness of Public-Houses

It is obvious that public-houses tend to promote drunkenness by the facilities they afford for it, and their effectiveness in this respect is enhanced by their attractiveness. The object of the vendor of alcohol, wholesale or retail, being to sell his goods, he spares no effort to tempt the passer-by to come in and drink, to this end spending vast sums of money in making public-houses attractive both outside and in, as also in advertising, circularising, and vigorously pushing the sale of the different kinds of alcoholic drinks in every possible way. And in the fact that so long as the sale of alcohol is in the hands of the private individual we may be sure that he will do his utmost to increase it, we find a consideration which should serve as a guide to the direction which future legislative measures to promote sobriety should take.

Customs Tending to Promote Drunkenness

Custom plays a large part in influencing the sobriety of a community. Among those customs which have tended to promote intemperance among us are the following:—

Church wakes, or "watches," were a survival of the heathen Paganalia which prevailed before the conversion of the Saxons to Christianity. They were religious feasts which in course of time became occasions of revelry and debauch, so much so, indeed, that Edward III. sought to suppress them. Nevertheless they survived into the seventeenth century, their place being gradually taken by fairs held on, or near, some saint's day.

Scot ales ("ale" = feast, or merry-making; "Scot" = payment) consisted of drinking meetings, the expenses of which were shared by the company. They were actually

announced beforehand in the churches, as we see from decrees in 1222 and 1240 by the Bishops of Durham and Worcester respectively, forbidding the practice.

Church ales were sales of ale which had been contributed by the parishioners, the money thus raised being spent in repairing the church buildings and providing books, surplices, and other church requisites. We are told that the person who spent the most at these gatherings was accounted the godliest. In course of time they degenerated into scenes of licence, and we find them being denounced from the pulpit in the sixteenth century.

Bride ale, which was probably often contributed by friends, was ale sold by the bride on her wedding-day as a means of providing her with ready cash. Wine-drinking, it may be observed, was part of the wedding ceremony; after the return of the married couple from the church, drinking and feasting began, and in this way as much was wasted "in one daye as was sufficient for the two newe married folkes halfe a yeare to lyve on". Similarly, funeral obsequies have been, and still are, among the lower classes, occasions for lavish indulgence in drink. Witness the Irish "wakes".

Speeding the parting guest with a draught of wine, which, being often given after he had mounted his horse, came to be called "the stirrup-cup," was another old-time drinking custom.

Few customs have been more provocative of drunkenness than *toasting*, a practice more common, apparently, in England than in other countries, certainly than among the French.

The custom of drinking *night-caps* at bedtime is an old one, and is referred to by Lady Macbeth when she says, "I have drugged their possets".

Drinking contests have at various times been the fashion, as in the case of peg-drinking, when each of the company

drank down to a peg (that is to say, half a pint every time the tankard came round). Often the drinking vessel was of a kind which compelled the emptying of it at a draught, as in the case of that earliest of all drinking vessels, the horn, which could not be made to stand upright; or like the cup at the Chirurgeons' Hall, which was furnished with bells which each drinker had to sound in token that he had fairly emptied it!

The practice of *doing business over drink*, which appears to have been started during the Tudor period, has lately happily fallen somewhat out of repute.

Fashion must be reckoned as another potent cause of drunkenness in the past. It has often been held "the correct thing" to get drunk; time was when the greatest compliment a host could pay his guest was to make him drunk, and it was no uncommon thing for prominent members to come into the House of Commons intoxicated. Thus such great parliamentarians as Pitt, Fox, and Sheridan were notable drinkers. It is certain, too, that under the Hanoverians there was much heavy drinking about the Court: George IV. was actually inebriated when the Princess Caroline was introduced to him.

Alcohol and Ill-Health

Although it is true that some people enjoy alcohol most when they are feeling well, and avoid it altogether when they are out of sorts, there can be no doubt that ill-health may predispose to intemperance. People who suffer from feelings of faintness or exhaustion are temporarily braced up by a "nip" of alcohol, and they may thus get into the habit of resorting to it frequently, and in this way gradually and all unconsciously develop into hopeless dram-drinkers. This probably happens more frequently with women than with men, because the former

are so much more apt to suffer from those minor ailments and abnormal feelings which are temporarily relieved by alcohol. The married women among the poorest classes, living as they do under wretchedly unhealthy conditions, are most of them chronically ill, and scarcely know what it is to feel downright well. Small wonder, therefore, that they should sometimes resort to alcohol to ease their sufferings. As a case in point it has been noticed that in certain highly temperate British regiments drunkenness is not uncommon among the soldiers' wives; and this is attributable to the fact that while the men lead a healthy, outdoor life, and are in prime physical health, the women spend most of their time indoors, under by no means the best of conditions. Their health is in consequence much inferior to that of their husbands, and, feeling tired, exhausted, irritable, and depressed, they are apt to resort to stimulants to gain a respite from those feelings, brief though that respite be.

At the so-called climacteric in women numerous nervous symptoms, such as headache, irritability, depression, flushing, shivering, faintness, and giddiness are apt to occur. Such feelings can be temporarily relieved by stimulants, and it is therefore not surprising that many women drift into alcoholism at this period of life.

Alcohol is sometimes taken, especially in the case of women, to relieve pain. Whisky is often given to young girls for this purpose. This is a pernicious practice. Physicians now recognise that great caution is needed in prescribing alcohol as a medicine, more especially in minor ailments, not only because they are beginning to doubt its therapeutic virtues, but on account of the danger of the patients' becoming too dependent on the prescription. It was the fashion not long ago to order a delicate girl wine and biscuits at eleven o'clock, and even now Burgundy or stout is sometimes prescribed for anæmic

young women and nursing mothers. Strange that any one should expect better results in the latter case from alcohol than from cows' milk!

Sometimes people in active work drift into intemperance by taking alcohol, not from self-indulgence but simply to "keep them going". I have seen many sad cases of this kind in wholly deserving people. In some of these there is great physical weakness: the man is run down and wants a holiday (which, perhaps, would set him quite right again, if he could only get it), or again, he may be really seriously ill; in either case he fortifies himself with alcohol in order to bring himself up to the mark, with consequences often the most tragic.

In other cases alcohol is taken to produce artificial courage: a shy and self-conscious man has to meet his Board of Directors, say; he dare not appear before them without first taking some stimulant, lest his self-consciousness lead him, in spite of his complete mastery of his work, to "make a fool of himself". A little alcohol removes this self-consciousness, gives him confidence, and enables him to come out of the ordeal with distinction, and thus he gets more and more dependent upon it. More than one case of this kind has come under my notice, and I am led to believe that they are by no means uncommon.

Among the physical conditions which may lead to intemperance must be reckoned severe nervous shock, such as sunstroke, or a blow on the head. The entire moral nature may in this way be altered, and one who has been strictly temperate may develop into a desperate inebriate.

Lack of occupation, loneliness, grief, domestic worry, all predispose to intemperance. If a person has nothing to do, he is apt to take alcohol to kill time. If he is lonely, alcohol may make him better pleased with his own com-

pany, or at any rate he may fancy that it does; people living by themselves, or wives spending the greater part of the day at home alone, but too often seek to solace themselves with the bottle; in like manner, those who are stationed in lonely districts, where they cannot consort freely with others of their own standing, often become hopeless tipplers. That poignant grief may tempt people to excessive drinking is but too well known: some terrible blow falls upon a person; the burden of life seems too great to be borne; alcohol at least drowns his grief for the time being, and he resorts to it with ever-increasing frequency until he becomes a chronic alcoholic. Again, home worries (especially among the poor), poverty, dirt and destitution, help to fill the public-houses, and lead to that form of inebriety which has been pathetically termed "misery drinking". This form of alcoholism is unhappily on the increase, while on the other hand the drink bill among the upper classes is steadily growing less.

Just as loneliness may be a cause of intemperance, so also may sociability. The meeting of friends is often the occasion of a drink together. "Come and have a glass," says one, and the invitation is accepted, but the pair do not unfortunately always stop at the first glass. The custom of "treating" people to drink is most pernicious. In the case of cabmen, dustmen, messengers and the like, it would be much truer kindness to give a small piece of money than to ply them with a dangerous and seductive drug.

III

THE PATHOLOGY OF ALCOHOLISM

BY

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The Pathological Action of Alcohol

IT has long been known that alcohol damages various kinds of animal and vegetable protoplasm. It is of course pointed out, very justly, that the action of alcohol upon "naked" protoplasm can scarcely be the same as is its action upon the protected and protecting cells of the alimentary tract. At the same time it must be evident that if we can obtain even a small amount of proof that alcohol acts on the tissues of the human body as it does on other protoplasm, we are justified in assuming that these tissues react to, and are injured by alcohol, much as are the tissues that we can study directly, the difference being one of degree merely, rather than of kind.

It is sometimes contended that the methods of the study of the action of alcohol on the protoplasm or tissues of growing animals and plants is unscientific; but against this it may be urged that if we are to study the effect of alcohol on the tissues and organs of the body, we must in the first instance determine, if possible, the action of

alcohol in various doses and dilutions upon normal tissues over the condition of which we can exert some control during the course of the experiment. Indeed, whilst it would be unreasonable to assume that certain substances, alcohol amongst them, which act as poisons to a single kind of protoplasm necessarily act in the same way upon another, it may be accepted, generally, that should these substances affect, deleteriously, many kinds of tissue and various forms of protoplasm other than those of the human subject, they will probably be poisonous also to these more highly developed human tissues.

Let us take one or two examples. Geranium or grass seed moistened with 1 per cent. of alcohol in water sprouts tardily, and if the use of this solution be continued the plants grow slowly and become etiolated; they are stunted, delicate and sickly.[1] The fresh-water medusa and the Daphnia (water flea) are unable to exist in a far weaker solution of alcohol, one part in 4,000 of water. Alcohol in the form of vapour or of very weak watery solution arrests or interferes with the development of the eggs of organisms so widely apart in the scale of animal life as the blowfly, the frog and the hen.[2] Rauber[3] studying the action of alcohol in various dilutions upon plants and animals, found that in 10 per cent. solutions, with which he usually worked, alcohol acted as a definite protoplasmic poison. All forms of cell life upon which he experimented —the hydra, tapeworms, earthworms, leeches, crayfish, various species of fish, Mexican axolotl, birds and mammals, including the human subject—being more or less affected;

[1] Ridge, J. J.: "Alcohol and Public Health". Second edition. London, 1893.

[2] Ridge, J. J.: *Medical Temperance Review*, vol. i., p. 148. London, 1898.

[3] Rauber: "Wirkungen des Alkohols auf Tiere u. Pflanzen". Leipzig, 1902.

plants become shrivelled and their chlorophyll altered, and animals intoxicated, aquatic organisms dying very rapidly. In a 2 per cent. solution of alcohol crayfish die in a few hours, perch become intoxicated, fall to the bottom of the fluid and die, though if they are transferred to pure spring water before death occurs they may recover in the course of a few hours.

It appears that the less highly developed the protoplasm the less is its activity affected by alcohol. For this reason most experiments carried out to determine the action of alcohol upon the circulatory system aim at determining the reflex or indirect action of alcohol through the nervous system, and it appears to be undoubted that comparatively small quantities of alcohol circulating in the blood and acting upon the nerve cells cause the heart's action, for example, to become distinctly abnormal. Beyond this, however, the direct action appears to play a part. Ringer and Sainsbury[1] maintain that an artificial blood containing nearly 7 per cent. of ethyl alcohol paralyses the muscular substance of the heart, this paralysis coming on at once and never being preceded by any evident stimulation to increased activity. Hemmeter[2] goes further and states that such doses kill the heart muscle instantaneously. According to the higher estimate, 7 per cent. of ethyl alcohol is required to affect the individual muscle fibres of the heart of a dog, but it has been proved by experiment[3] that blood containing $\frac{1}{4}$ per cent. of ethyl alcohol so alters the protoplasm of this muscle that within a single minute there is a measurable diminution in the amount of work done by the heart even when it is isolated from

[1] See *The Practitioner*, vol. xxx., p. 339. London, 1883.

[2] Hemmeter: "Studies from the Biol. Lab., Johns Hopkins Univ.," vol. iv., No. 5. Baltimore, 1889.

[3] Martin and Stevens: quoted by Munro and Findlay, *Medical Temperance Review*, vol. vi., p. 325. London, 1903.

extrinsic nerve supply, whilst if the strength of the solution be doubled the activity of the heart may be so far diminished that it is scarcely able to propel a sufficient amount of blood to supply its own nutrient arteries. Under these conditions the heart becomes abnormally dilated, it loses much of its systolic power, this condition becoming more marked as the administration of alcohol is prolonged.

Dr. Dixon[1] states that in experiments made upon animals that are not anæsthetised the first effect of alcohol upon the pulse is a slight acceleration which he supposes is due to an irritative effect of peripheral origin. He thinks that there is also an initial stimulating effect on the heart. As regards the peripheral blood-vessels there is usually dilatation of the vessels of the limb associated with the constriction of the vessels of the viscera. He believes, moreover, that unless the alcohol is given in large doses, there is a preliminary rise in the blood pressure, a fall taking place when the large doses are given. When large doses are administrated rapidly the action of the heart is materially interfered with, the drug acting directly upon the cardiac centre.

Some time ago, in order to determine the action of alcohol upon lowly organised protoplasm, I carried out a series of experiments on Byerinck's phosphorescent bacillus, an organism which emits light and thus offers for our observation a definite and easily measured functional activity. A vigorous culture of this bacillus multiplying and growing in broth emits a bright glow. To a series of such cultures I added various measured quantities of ethyl alcohol and the results were measured photographically.[2] I found that a photographic plate submitted to

[1] See "Report of the British Association for the Advancement of Science for 1904," p. 742. London, 1905.

[2] Woodhead, G. Sims: "Recent Researches on the Action of Alcohol in Health and Sickness". *The British Journal of Inebriety*, January, 1904.

the light of an active culture gives a distinct image of any aperture through which the light is allowed to pass. On the addition of alcohol in quantities of from 12 to 7 per cent., the light-producing function of the phosphorescent organism is completely paralysed, and no image can be obtained on a sensitive plate even with a two and a half to three hours' exposure. When only 5 per cent. alcohol is added a faint glow that will just give a photographic image in two and a half hours is obtained. The tube containing 4 per cent. of alcohol gives a slightly stronger image, as do also the 3 per cent. and 2 per cent. tubes, though the images are not nearly so distinct as are those obtained when we give a twenty minutes' exposure of a tube in which there is no alcohol. With the 1 per cent. and ½ per cent. tubes, however, there appears to be little difference as regards the density of the image obtained between them and the tube containing no alcohol. It must of course be remembered that we are here dealing with a low form of protoplasm, and that the function of light production does not require nearly such complex conditions as are essential for the continued life and activity of the nerve cell. Even yeast cells which, from the fact that they play a part in the disintegration of sugar into alcohol, are probably capable of existing in alcohol longer than almost any other form of protoplasm, become paralysed and incapable of carrying on their special functions in the presence of 13 per cent. of alcohol.

Alcohol then may be classed with those poisons produced by the lower vegetable organisms which act directly upon protoplasm. These poisons combine readily and rapidly with oxygen, and it appears that this combining power is so great that oxygen, which under normal conditions would combine with the tissues, combines with alcohol.

Further, alcohol appears to have the power of so alter-

ing the tissues that they themselves become less capable of taking up some proportion of the oxygen which is thus more at the disposal of the poison. The "oxygen hunger" of these poisons is so great that when they are taken into the body they interfere with the oxidation of the fat and carbohydrates along with which they are ingested. It is maintained that the oxygen taken up by the blood in its passage through the lungs is rapidly seized upon by these poisons, alcohol amongst them, as they circulate in the blood, and, combining with them, little or none is left for the tissue protoplasm, and the nutritional processes are thus greatly interfered with.

Further, owing to this interference with the nutrition of the protoplasm, there is a serious disturbance in the process of excretion of waste products, which, accumulating in the tissues, exert a further poisonous action on the protoplasm. Alcohol is found in the blood in maximum quantity fifteen minutes after it has been administered; it may also be found in the other fluids of the body, especially in the lymph which bathes the tissue cells and supplies them with their nutriment, also removing from them their waste products. Such lymph contains proteid, fat and carbohydrates which under ordinary conditions are assimilated by the protoplasmic cells; it also contains waste materials which have been excreted by the cells. Unaltered alcohol and the products of alcohol, even in small quantities, when present in this lymph certainly exert a paralysing influence on the cells, with the result that the processes of nutrition, both assimilative and excretory, are rendered less active, and even such substances as are taken up by the cells are only slowly and partially oxidised, whilst the waste products that should be excreted along with partially digested food materials may continue to accumulate, and the cell is clogged and starved simultaneously.

In many alcohol drinkers who, presumably, are otherwise healthy, there is often an excessive accumulation of subcutaneous adipose tissue. This in itself is not recognised as an abnormal condition, but when in such cases we find a similar accumulation of fatty material in the connective tissue between the muscle fibres of the heart wall or in the liver cells, positions in which it is not present, permanently at any rate, in healthy individuals, we naturally suspect the healthiness of the process. In the liver cells fat should be present, normally, for a comparatively short time only, and for a definite interval after food has been taken and the process of digestion has commenced. In the case of a patient who has taken large quantities of alcohol during life, this fatty condition, often very marked, of the heart or liver, is found to have persisted after the patient has become thin or emaciated, the pathological process continuing even after the fat has disappeared from the subcutaneous tissue and from the omentum.

In alcoholic patients, however, a second fatty change of a much more serious character is often met with—fatty degeneration. Here the protoplasm appears to undergo marked degenerative changes, fatty material being formed at the expense of the proteid substance of the cells. This fatty change appears to be almost identical with a condition described by Bauer[1] as being present in the protoplasm of the starving dog. Such an animal, after using up the subcutaneous fat, and sometimes even that stored up in the omentum, is compelled to draw for its further supply of heat-giving fat upon the protoplasm of the cells of such important organs as the heart, liver, muscles, etc., the molecule of this active protoplasm being broken down

[1] Bauer: *Zeitschr. f. Biol.*, München. Bd. vii., S. 63, 1871, and Bd. xiv., S. 527, 1878.

into a fatty molecule and a waste nitrogenous molecule, the cells of these various organs becoming wasted and the organs atrophied.

Certain other poisons, ether, phosphorus, arsenic, and some of the products of metabolism and of disease-producing bacteria, all appear to act in a somewhat similar fashion. Alcohol, therefore, must be considered as capable of inducing changes similar to those set up by starvation and by certain organic and inorganic poisons. It is found that prolonged muscular exertion in which sufficient time is not allowed for rest and repair is followed by similar results, and it may be pointed out that alcohol, which is so frequently given to starving patients and to those who have over-exerted themselves, simply accentuates those conditions which it should be our aim to ameliorate, especially as between alcohol poisoning and starvation there is found to be the following essential difference. In the latter much of the subcutaneous, omental and other fat is used up before the parenchymatous cells of the various organs are attacked, but in alcohol poisoning this is not the case, and fatty degeneration of a most marked kind both of the heart and of the liver may occur in very stout patients, in whom, therefore, there still remains a considerable store of subcutaneous and omental fat in addition to that found in such patients between the muscular fibres of the heart and the liver cells.

Bearing on the above it is very interesting to find that the fatty degeneration observed in alcoholic patients is very similar to that met with in cases of diphtheria and other diseases induced by the action of bacterial poisons, and the more carefully these various conditions are analysed the more it becomes evident that the condition set up by the poisons of disease-producing organisms and by alcohol are essentially the same or at any rate run on parallel lines.

Alcohol and Cardio-Vascular Changes

As the result of the experimental observations of Berkley[1] and the clinical and pathological work of Cowan[2] and Weichselbaum, it is now fully recognised that alcohol plays a very important part in bringing about fatty degeneration of the heart muscle, a condition so frequently associated with sudden heart failure. Berkley found in four rabbits out of five in which he had induced chronic alcohol poisoning fatty degeneration of the heart muscle, a condition, he says, which "seems to be present in all animals subjected to a continual administration of alcohol in which sufficient time between the doses is not allowed for complete elimination". Cowan summing up the causes of fatty degeneration of the heart muscle speaks of the presence of a toxic agent in the circulating blood, or in the fluid contained in the small nutrient spaces between the tissues of the heart, as being one of the most important factors in the production of this condition, and amongst toxic conditions so produced he gives a prominent place to alcoholism, classifying it with uræmia and phosphorus, arsenical and chloroform poisonings, the alcohol, like the poisons in these other conditions, acting definitely as a protoplasmic poison by which the nutrition of the heart muscle is affected. He finds that alcoholic cases "bear acute disease badly, failure of the heart always ensuing at an earlier period than one would anticipate". Dr. Mitchell Bruce[3] has called attention to the fact that the

[1] Berkley: "Johns Hopkins Hospital Reports," vol. vi., p. 30. Baltimore, 1897.

[2] Cowan: *Journal of Pathology and Bacteriology*, vol. viii., pp. 177-98. London and Edinburgh, 1902.

[3] Bruce, Mitchell: "Lettsomian Lectures on Disease and Disorder of the Heart and Arteries in Middle and Advanced Life," *The Lancet*, vol. I., p. 845. London, 1901.

direct effects of alcohol on the heart and vessels are so "complicated with the many indirect effects which it produces in these organs, by deranging the functions of alimentation and assimilation, the nervous system and the kidneys, and with the secondary effects on the vessels and heart of chronic nephritis, due to the same cause, that it is difficult to determine which are direct and which are indirect". He maintains, however, with Cowan and others, that dilatation of the heart and alterations of the myocardium are often met with as the direct result of the use of alcohol—acute dilatation, fatty degeneration of the myocardium, being very frequently met with amongst alcoholic patients. I have seen two cases of acute dilatation leading to sudden failure of the heart—both in young, otherwise healthy people, who had succumbed to acute alcoholism in which there was a condition of acute inflammation of the heart-wall unaccompanied by any primary endo-pericarditis, in which the muscle fibres appeared to be undergoing cloudy swelling and rapid, almost hyaline, changes, whilst between the altered muscle fibres we had an accumulation of leucocytes and a small number of proliferating fixed connective tissue cells. One of these patients was suffering from delirium tremens, the other was just recovering from an acute attack of the same condition. Both died suddenly from heart failure.

In addition to the fatty degeneration of the heart that is so frequently met with in chronic alcoholics there appears, in some cases, to be an increase of fibrous tissue between the bundles of muscle fibres, accompanied by wasting of these fibres.

It has, of course, long been recognised that functional changes leading up to or indicating structural alteration can be present some time before any histological changes can be made out. The heart affected by alcohol is no exception to this rule, as functional changes occur in this

organ before any organic change can be made out in the heart muscle, and we are assured by physiologists that alcohol renders systolic output incomplete, increases the diastolic pressure and causes dilatation of the heart. Dr. Leonard Hill[1] gives the following passage quoted from Stephen Hales: "The heart being in this case like a water mill that is surcharged with a flood both before and behind, its force must needs abate and grow languid," and it has been found that in the case of animals this condition may be produced experimentally by the exhibition of alcohol, the heart becoming so large that it can no longer beat in the fibrous pericardium by which it is surrounded and finally it ceases, coming to rest in the position of dilatation or distension.

Alcohol when taken into the stomach brings about dilatation of the smaller superficial blood-vessels, a dilatation which appears to be due to paralysis of the nerves carrying the stimuli that set up the contraction of the small muscles surrounding the blood-vessels. Here as elsewhere when there is continuous or intermittent loss of activity of the muscle resulting from changes in the nerve there is brought about a diminished activity or impairment of the nutrition, accompanied by some wasting or even degeneration of the muscle. This degeneration in patients who succumb to chronic alcoholism usually takes the fatty or calcareous form, involving the muscular coat; along with this there is frequently an increased fibrous tissue formation in both inner and outer coats of the vessel.

In old people these degenerative changes are of frequent occurrence and in most cases it is difficult to assign alcohol as their etiological factor, but in young people who have suffered from chronic alcoholism, the connection

[1] Hill, Leonard: Schäfer's "Text Book of Physiology," vol. ii., p. 53. 1900.

between cause and effect—alcohol and the disease—can often be traced, for in many of these cases all other possible causes of change may be eliminated.

Heart failure, then, one of the most frequent causes of death in people of adult and advanced years, is often due to fatty degeneration, and a patient who suffers from alcoholic degeneration necessarily runs a much greater risk of heart failure during the course of acute fevers or from overwork, exhaustion and an overloaded stomach and the like than does the man with a strong healthy heart unaffected by alcohol or similar poisons.

The vascular system, by which the blood is conveyed to various parts of the body, is sometimes overlooked in our examination of diseased organs, the changes in the vessels being overshadowed by the more marked changes that are met with in the other tissues of these organs. Nevertheless on careful examination of the delicate lining of the blood-vessels and of the spaces that surround these blood-vessels, fairly pronounced evidence of the action of alcohol on these tissues may be observed.

In chronic alcoholism in which the poison is acting continuously, over a long period, a peculiar fibrous condition of the vessels is met with; this, apparently, is the result of a slight irritation of the connective tissues of the walls of these vessels. The wall of the vessel may become thickened throughout its whole extent or irregularly, and the muscular coat may waste away as new fibrous or scar-like tissue is formed. The wasting muscles may undergo fatty degeneration and, in these, lime-salts may be deposited; the rigid, brittle, so-called pipe-stem vessels are the result. Vessels thus affected cannot bring up a sufficient quantity of blood to the organ which under normal conditions they should supply, and the change is so far-reaching that even the smaller vessels, through the walls of which the nutrient materials make their way out from,

and certain of the waste products make their way into, the circulating blood, are so far altered that these walls now constitute a barrier to the proper transmission of nutrient and waste materials, and the nutrition of the surrounding tissue is materially interfered with. All this rigidity of the vessel necessarily throws an extra amount of work upon the heart which now has to drive the blood through a vessel, from which it gets no assistance in the form of either muscular or elastic contraction. As the result of this the heart becomes hypertrophied or overgrown, a certain amount of reserve power or energy is used up, and this vital organ is often brought dangerously near the marginal line between competence and failure. This calcification or deposit of lime in the vessels occurs in patients who, though not necessarily drinkers, either intermittent or habitual, nevertheless, up to the later years of adult life or the earlier period of old age have taken what they are pleased to call "moderate" quantities of alcohol. This form of vascular disease, at one time scarcely associated with chronic alcoholism, is now supposed by some of our foremost physicians to be associated first with high tension and then with the further changes which accompany and follow long-continued alcoholism.

Alcohol and the Connective Tissues

Alcohol acting upon tissues appears to bring about degeneration of the cells of the higher forms, but proliferation of the cells of the lower-connective tissues. When this proliferation occurs a quantity of scar tissue is usually formed, and in the organs of patients suffering from alcoholic poisoning the processes may go on side by side, as in the liver, or one may be in excess of the other. Dr. F. W. Mott maintains that different tissues are affected by alcohol according to their power of resistance, the weaker tissues

being first attacked, so that in one case there may be fatty degeneration of the liver, in another scar tissue formation and what is known as chronic alcoholic cirrhosis (hobnail liver, gin drinkers' liver). The stages of these connective tissue changes are well illustrated during the course of inflammation of the liver. First there may be an acute inflammation characterised by dilatation of the blood-vessels, the presence of numerous scavenging cells, and a gradually increasing number of the large scar tissue-forming cells. After a time the inflammatory process becomes less active, the cells do not proliferate so rapidly, they form fibrillar tissue which constitutes the scar tissue, and thus like the scar tissue in other parts of the body has a great tendency to contract.

In chronic alcoholic cirrhosis the scar tissue appears in many cases to be formed almost directly, though on careful examination it will be found that here and there as in the more acute inflammatory processes, there is usually some evidence of the cellular origin of the new tissue, and also of the presence of a number of the scavenging cells—certain indications of the presence of an irritant, and probably also of the accumulation of waste products in the tissues. As this new scar tissue increases in quantity the liver cells waste away. They may undergo fatty degenerative changes, and may disappear altogether, the fibrous tissue advancing and gradually "replacing" them. Whether this scar tissue formation goes on in the heart, in the kidneys, in the liver, in the blood-vessels or in the nerves, the process is essentially the same, and it must be associated with the accumulation of poisonous or waste products in the lymph spaces through which the nutrient fluids pass to the tissues. In all cases the functions of the most highly developed or most weakened cells are those first affected. Such cells become wasted and degenerated, and after this new tissue—never highly

developed, indeed often of a very low type, corresponding to the white scar tissue that is seen in an old wound—comes to take their place. The contracting scar tissue of a wound has its exact homologue in the contracting scar tissue that is met with in the liver, in the kidney and in the brain.

Alcohol and the Brain

Of the changes which take place in the brain as the result of the administration of alcohol, our knowledge would be very limited had it been necessary to confine our attention to the human tissues, as here are so many possible sources of error, both as to observation and interpretation. Several observers[1] have, however, carried on experiments on acute alcholism in the lower animals. All are at one in recording marked degenerative changes in the inner lining of the small vessels of the brain, and an exaggerated condition of waste—a "clogging" due to the accumulation of rapidly produced waste products in the lymph spaces in the outer walls of the vessels. It has been noted also that in some cases small clots are found in the vessels—clots which interfere with the transmission of the blood along the normal channels. This clogging of the vessels and the spaces around them affords evidence that the tissues are breaking down very rapidly, but its chief importance appears to lie in the fact that it leads to continued interference with the nutrition of the surrounding tissues, thus playing a part in the determination of further degenerative changes.

Alcohol in large doses, given to one of the lower animals

[1] Dehio: *Centralbl. f. Nervenh. u. Psychiat.*, Coblenz u. Leipzig, N.F., vi., p. 113, 1895; Colin C. Stewart: *Journ. Exper. Med.*, N.Y., vol. i., p. 623, 1896; Berkley: "Johns Hopkins Hospital Reports," vol. vi., pp. 1-108, 15 plates, Baltimore, 1897; and *Brain*, vol. xviii., pp. 473-96, 5 plates, London, 1895.

or to a human subject, sets up remarkably definite changes in the nerve cells, especially in those situated near the "plugged" vessels and lymph spaces already referred to. The prepared and stained nerve cell when examined under the microscope first loses its peculiar mottled appearance, a mottling that characterises the normal cell when stained with certain reagents. Moreover, marked changes take place in the branching processes running out from the cells; these changes are somewhat like those to be described in chronic alcoholic poisoning, though as a rule they are not nearly so regular nor are they so far advanced.

When we come to the consideration of the brain cells in chronic alcholism, we are led to the conclusion that the changes in these cells are those of imperfect nutrition, though they correspond in many ways to the changes that are brought about by the action of certain other toxic substances. Running out from the normal nerve cell are a series of long processes on which are arranged numerous delicate lateral twigs. These long processes taper off slowly and regularly for a short distance from the base of the cell, after which they are prolonged as threads of fairly constant size throughout the remainder of their length. In this condition in which the body of the cell is altered it may be atrophied and fatty, but in some cases where no very marked alterations can be demonstrated in the cell itself these long processes are seen to undergo remarkable changes. Little swellings make their appearance at regular intervals, first near the tip of a process, and gradually work back towards the body of the cell, so that after a time the process looks almost like a string of beads. Alongside these changes, some of the lateral twigs have become swollen and shortened, whilst others disappear; in advanced stages the bulk of them so disappearing. Let us see what all this means. The nerve cell may be compared to a small electric battery, the long processes leading from it to

wires, and the small twigs to little associating wires, corresponding to the induction coils bringing the various processes in association with one another and passing on the current from cell to cell in different directions. Whenever we have irregular thickening and shortening of the long fibres, and disappearance or stunting of the small lateral twigs, certain of the "communications" between cell and cell are done away with. So many of the connecting wires are cut out, as it were, and the interference with the passage of nerve impulses along the nerves is so marked that commencing with the more delicate processes of thought and going on to the machinery by which "we live and move and have our being," the nervous mechanism is gradually thrown out of gear. It might be suggested that all this may be met with in the brain of a slowly alcholised rabbit, an animal not accustomed to take alcohol, but that it does not follow that the same changes are to be found in the human brain. Berkley, however, points out that these changes may be demonstrated in the brain of a patient who has suffered from chronic alcohol poisoning. They vary in degree only, though the resemblance in some cases is more marked, in others less so. These changes, he says, "are not peculiar to the effects of alcohol; they may be reproduced by any irritant drug or bacterial toxic product circulating in the blood and acting for a considerable time on the living protoplasm of the nerve cell"; but again, "alcohol, which was supposed to be the least deleterious of all the series, has a very definite and destructive effect upon the nerve cells".

Alcohol and the Peripheral Nervous System

At one time the paralysis and other alcoholic nervous phenomena were ascribed almost entirely to the occurrence of changes in the peripheral nerves. Now, however, that

marked pathological changes have been demonstrated in the nerve cells, there appears to be a danger that we may go to the opposite extreme and discount the poisonous action of alcohol on nerve fibres. The nerve fibre may be looked upon as an electric wire or cord with an outer or insulating covering. In the presence of diphtheria poison or of alcohol given in long continued doses, this outer or insulating cover breaks down, whilst after a time the central core, the axis cylinder, as it is called, becomes irregularly thickened and constricted, so that instead of a solid rod of equal thickness throughout, we have a structure presenting the appearance of a string of beads. Wherever this irregular thickening is in evidence, the nervous impulses are transmitted very irregularly and intermittently along the nerve; the patient finds that his experience is now no longer to be relied on; he is thoroughly at fault, and is unable to translate the sensations transmitted by these altered nerves, or to keep his various muscles under control simply because his experience no longer informs him what impulse he should send along a certain nerve in order to bring about the required stimulation of a muscle or group of muscles. In addition to these changes in the nerve fibres themselves, there is, as the result of the circulation of alcohol in the nutrient spaces of the connective tissue supporting the nerves, an increase in the amount of fibrous tissue formed between the nerve fibres, just as there is around the small vessels of the liver, kidney and other organs. These changes in the nerves usually come on very rapidly, and appear, in many cases, to result from the action of special poisons manufactured by certain disease-producing micro-organisms. It is now generally accepted, however, that these special poisons act far more certainly, more rapidly and more intensely when alcohol has been quietly working away and doing its work for some time before the advent of the second poison. Dr.

Alexander James[1] has drawn special attention to this point. Arguing from a series of observations made on cases of inflammation of the nerves, he came to the conclusion that in most of these cases the alcohol had been inflicting damage on the tissues long before the onset of the final inflammation of the nerves of which the special symptoms are the manifestation. He reports a case in which alcoholic poisoning had previously helped to cause the development of heart damage, and others in which diseases of stomach, liver or kidney had been induced by alcohol before any inflammation of the nerves had manifested itself, and he points out that this may be compared to the delirium tremens so apt to supervene in alcoholic patients suffering from acute diseases such as pneumonia or typhoid fever, although delirium tremens is seldom or never met with in non-alcoholics suffering from these diseases.

Alcoholism and Specific Infective Diseases

During recent years the study of the relation of alcohol to specific infective diseases has been one in which many thoughtful physicians and surgeons have interested themselves, and a considerable amount of evidence that alcoholised patients and animals are more readily attacked by the various febrile diseases—inflammation of the lungs, erysipelas, typhoid and other fevers—than are those not alcoholised, has been accumulated. Deléarde,[2] Laitenan,[3] and Abbott[4] have put forward a considerable number of

[1] James, A.: *Edinburgh Medical Journal*, 1896.

[2] Deléarde: *Ann. de l'Inst. Pasteur*, t. xi., p. 837. Paris, 1897.

[3] Laitenan: *Acta Soc. Sc. Fennicae*, t. xxix., No. 7. Helsingfors, 1900.

[4] Abbott: *Journal of Experal. Medicine*, vol. i., p. 458. New York, 1896. See also "Report of the American Committee of Fifty to investigate the Alcohol Question". Boston and New York, 1903.

very cogent reasons, derived from observation and experiments on animals, why alcohol should not be given in cases where micro-organismal poisoning is an important factor. It has been fully demonstrated that it is possible to protect animals against severe attacks of certain diseases by the production in them of mild attacks of these same diseases. A child that has suffered from scarlet fever seldom contracts that disease a second time. Similarly, a patient who has had smallpox or typhoid fever is usually immune against a second attack. In order to put this matter to the test Deléarde selected three diseases (1) rabies or hydrophobia, (2) tetanus or lockjaw, (3) anthrax, the splenic fever of cattle. In the case of both tetanus and anthrax the specific micro-organism producing the disease had been described and previous experimenters had been successful in inducing to all these three diseases a diminished susceptibility—an artificial immunity. All three diseases may be induced in the acute or fatal form, or if the virus be weakened by special methods, a milder attack, which under ordinary circumstances protects against more severe attacks, may be set up.

Alcohol and Hydrophobia or Rabies

Working in Calmette's laboratory in Lille, Deléarde[1] gave to each of a number of rabbits a quantity of alcohol, commencing with about one and a half drachms a day, and gradually increasing the dose to two and three-quarter drachms. This quantity of alcohol undoubtedly interferes with the nutrition of the rabbit, its administration being followed by "slight falling off in weight, but after a time this fall ceased, and then the animal gradually returned to its normal weight". It had, so to speak, accommodated itself to its new conditions, but although it had regained its

[1] Deléarde: *Ann. de l'Inst. Pasteur*, t. xi., p. 837. Paris, 1897.

normal weight very marked changes had taken place in its body, fluids and tissues. He then vaccinated some of these alcoholised animals (continuing the alcohol during the period of treatment) and several non-alcoholised animals, against hydrophobia. He found that whilst the animals that were not receiving alcohol had acquired a very high degree of immunity, the animals that had been alcoholised throughout had received practically no increased immunity to a fatal dose of the hydrophobia poison. The animal remained just as susceptible to the disease as if no attempt had been made to vaccinate it; the alcohol had so interfered with the reaction between the vaccine and the tissues that no immunity could be set up. Now taking an animal that had received alcohol for a certain period, as in the first set of experiments, he discontinued the alcohol, and after a few days vaccinated the rabbit with hydrophobia virus. He found that a certain degree of protection was now undoubtedly conferred, but equally undoubtedly it was not so marked as when no alcohol had been given at any stage. As a further experiment he took animals that had received no alcohol up to the end of the immunising period and gave them alcohol. None of the animals injected with a lethal dose of the virus died, and a considerable degree of immunity evidently remained. It appears then that, although alcohol could interfere with the efficacy of the vaccination against hydrophobia, it could not destroy the effects of vaccination when these had once been produced. In fact his experiments convinced him that acute alcoholism has the effect of preventing the acquisition of the condition of immunity, but that the effect of alcohol on the tissues is not so marked when its administration is stopped, the tissues regaining some of their original powers and properties. Finally when the property of immunity has been acquired before alcohol, even in considerable doses, is given, the cells and

fluids of the body between them hold on to this property. Deléarde supports his work from the experimental side by clinical observation and refers to an alcoholic patient bitten by a mad dog who appeared to be much more susceptible to the action of the hydrophobia poison than a second patient bitten and inoculated under otherwise less favourable conditions. The first case, a man, aged thirty, of intemperate habits, was bitten on the hand; though subjected to a careful and complete anti-rabic treatment he succumbed. The control case was a child aged thirteen years who was bitten on the face by the same dog and on the same day. The course of anti-rabic treatment was exactly the same as in the first patient, but the boy, although suffering from a much more severe bite, inflicted in the position that is usually recognised as being much more dangerous—the head and face—recovered. Deléarde was so strongly impressed with what he saw in the wards and in his experiments that he strongly advises patients who have been bitten by mad dogs to abstain from the use of alcohol not only during the period of anti-rabic treatment but also for at least eight months afterwards, during which period, under ordinary conditions, there appears to be a steady and persistent increase of the immunity acquired.

Alcohol and Tetanus

In the case of lockjaw (tetanus) alcohol appears to play an even more important part in interfering with immunisation, for animals that have already been vaccinated against lockjaw on being alcoholised lose their insusceptibility and may then be readily infected. Vaccinated against lockjaw and simultaneously alcoholised, rabbits may acquire a slight immunity, but it is very difficult indeed under these conditions to protect them against lockjaw poisoning. As regards those cases in which animals are

first alcoholised and then vaccinated against lockjaw a certain insusceptibility may be acquired if the exhibition of the alcohol be stopped as soon as, or before, the process of vaccination is begun. It is evident from these experiments that even after immunity has been acquired alcohol may destroy it, an effect which should surely be remembered in connection with treatment. When a patient is recovering from an attack of one of the specific infective diseases he recovers because, during the course of the disease, he has acquired a certain specific immunity which results from changes that have taken place in the tissues and fluids of the body. If alcohol when administered impairs this immunity in any way, or interferes with its production, the patient's chance of recovery must necessarily be diminished.

EFFECTS OF ALCOHOL GIVEN BEFORE (AND THEN STOPPED), DURING, AND AFTER, THE "PROCESS OF IMMUNISATION"

	Before.	During.	After.
Rabies	+	−	$\frac{+}{-}$
Lockjaw	$\frac{+}{-}$	−	−
Anthrax	$\frac{+}{-}$	−	$\frac{+}{-}$

\+ Production of good immunity.

$\frac{+}{-}$ Production of slight immunity.

\- Production of no immunity.

ALCOHOL AND ANTHRAX OR SPLENIC FEVER

Continuing his experiments Deléarde was unable to confer immunity against anthrax on animals that were alcoholised during the period of vaccination, and although

animals first alcoholised and then vaccinated—the alcohol being stopped during the period of vaccination as in the two preceding cases—acquire a certain degree of immunity, they rapidly lose condition when infected, and suffer more severely than do the non-alcoholised animals, vaccinated at the same time and infected in the same manner.

Laitenan working in Professor Fraenkel's laboratory at Halle and using much smaller doses than those used in Deléarde's experiments, four to six drops per pound weight of the animal, and exhibiting the alcohol in a well-diluted form and over long periods—weeks or even months—before the final stage of experiments was entered—and continued for some time afterwards, experimented on the bacilli of splenic fever, tubercle bacilli—the bacilli of consumption—and diphtheria toxin—the poison produced by the diphtheria bacillus. As the result of numerous experiments this observer was convinced that alcohol, whether introduced subcutaneously or by the stomach, induces in the animal body increased susceptibility to infection by the above organisms and toxins.

Alcohol and Septic Infection

Abbott worked out the same question in connection with the predisposition of animals to the attacks of certain pus-producing organisms—suppuration and blood poisoning. He convinced himself that the normal resistance of rabbits to these organisms is greatly diminished when alcohol is given to the stage of acute intoxication. Not only was pus formed more readily and at an earlier date, but it was formed in larger quantities, and an animal to which alcohol had been administered usually succumbed to the suppurative process much more readily than did a non-alcoholised animal. The experience of surgeons affords confirmation of these experiments. Indeed, it is

well recognised that operations on alcoholic patients are dreaded by all surgeons whatever may be their opinion on the general question of total abstinence.

Alcoholism and Tuberculosis

Alcohol, far from being antagonistic to tuberculous disease as was at one time supposed, is looked upon as one of the great predisposing factors in the production of both acute and chronic pulmonary tuberculosis, and it is generally accepted that in alcoholic patients tuberculosis is far more likely to assume an acute and generalised form than it is in the non-alcoholic patient, for as Dr. Dickinson[1] said: "We may conclude, and that confidently, that alcohol promotes tubercle, not because it begets the bacilli, but because it impairs the tissues, and makes them ready to yield to the attack of the parasites". In France in the districts in which the greatest amounts of alcohol are consumed the highest mortality from tuberculosis is met with, alcohol apparently acting as a devitalising agent and rendering the person indulging in it to excess a more easy prey to infection. Baudron in 1901 showed that the consumption of alcohol of 12·5 litres per person corresponded to a mortality from tuberculosis of 32·8 per 1,000 living, whilst the consumption of 35·4 litres of alcohol per person corresponded to a death rate from tuberculosis of 107·8 per 1,000.

Alcoholism and other Acute Diseases

Dr. Muirhead of Edinburgh at one time maintained that the death of a case of pneumonia uncomplicated by alcoholism was a thing practically unknown in his experience. This held literally true until influenza made its ap-

[1] Dickinson: The Baillie Lecture on "The Seed and the Soil," *The Lancet*, i., p. 299. London, 1902.

pearance in 1889. Since then those who follow this question have had reason to modify the above opinion, but curiously enough only in the cases of pneumonia which follow influenza, in which the influenza poison appears to assume the rôle that at one time was monopolised by alcohol in acting as a cumulative poison. To take just another example. McLeod and Milles[1] point out that in Shanghai cholera is exceedingly rare amongst the European section of the resident population, but amongst sailors who have indulged in alcoholic excesses it is of far more frequent occurrence and assumes a much more fatal type; and they consider that alcohol plays a very important part in predisposing to Asiatic cholera and in increasing a patient's susceptibility to the disease. Abbott, Deléarde and Laitenan, then, supported by Fraenkel, Calmette, Pearce Gould, Horsley and others are unanimous in their condemnation of the administration of alcohol, even in comparatively small doses, to patients suffering from the above-mentioned special diseases. It is also agreed that in certain other infective diseases—pneumonia; or intoxications—diphtheria, tetanus, snake-bite, etc., the use of alcohol is not merely useless but actually harmful.

Alcohol and the Mechanism of Immunity

It is evident that organs in which there is degeneration of the special parenchymatous cell or in which there is a marked increase in the amount of fibrous tissue will be less efficient and the patient will therefore be in a more susceptible condition than if they were healthy. But as these changes in the organs do not account for certain of the phenomena observed in connection with the Pathology of Alcoholism the following points may be considered.

[1] *Proc. Roy. Soc.*, vol. xvi., p. 18. Edinburgh. *Rep. Lab. Coll. Phys.*, vol. i., p. 161. Edinburgh, 1889.

In pneumonia and snake-bite, when recovery takes place, an invasion of the parts affected by a large number of leucocytes or white blood corpuscles is invariably observed. Deléarde insists that this invasion is essential to recovery from any of the microbic intoxications or infections as is also the integrity of the leucocyte. Metchnikoff and his pupils maintain that in the presence of alcohol just as in the case of opium poisoning this integrity is not maintained. Massart and Bordet[1] demonstrated that alcohol, even in very dilute solution, drives away the leucocytes, and if alcohol is circulated in the blood even in very minute quantities the leucocytes cannot push their way into the blood at all readily and therefore cannot be transported to the seat of the disease. Alcohol thus prevents the white cells or leucocytes from coming up to attack and repel the invading organisms. It also assists other poisonous substances that in more or less concentrated form have the power of repelling leucocytes, acting along with them, cumulatively, driving away or it may even be paralysing these white cells of the blood. The leucocytes act as a kind of sanitary police. They appear wherever dead matter is to be removed, they attempt to prevent the invasion of the body by disease-producing organisms, and once they come to grips with their opponents they die rather than give way. Before coming to grips, however, if their opponents appear to be too strong for them they may attempt to keep out of the way for a time until such opponents are weakened or they themselves have had time to prepare for the fight. Disease-producing organisms getting into the tissues of animals and patients during the time that alcohol is holding back the leucocytes and meeting with no resistance from them entrench them-

[1] Massart and Bordet: *Journ. de Med. de Chirur. et de Pharmac.*, 21 fevrier. Bruxelles, 1900. *Ann. de l'Inst. Pasteur*, t. v., p. 417. Paris, 1891.

selves strongly, so that the leucocytes are not able to drive them out, and a severe, often fatal, attack of disease is the result.

Alcohol and Predisposition to Disease

Alcohol not only interferes with the reaction of cells to poisons, thus checking the production of immunity, but beyond this, may actually reinforce the poison formed by the disease-producing organisms, often with results most disastrous to the patient.

It has been found that lowering of the temperature of the body renders both man and the lower animals more susceptible to the attacks of infective disease. Alcohol, especially when given in large doses, may bring the temperature below the normal; during this temporary fall the body seems to be specially susceptible to disease. This fall appears to be due to marked dilatation of the blood-vessels of the surface and increased activity of the sweat glands, the normal reaction against cold being paralysed by alcohol. Small doses of alcohol may result in the lowering of the temperature, only half a degree, say, but even that under certain conditions is dangerous; when large doses are given the temperature may fall very considerably. The lowest temperatures recorded in living human beings have been observed in drunken persons. The temperature of a normal rabbit exposed to intense cold falls only about 5° F., whilst the temperature of an alcoholised rabbit may fall as much as 34° F. In a normal guinea-pig exposed to the cold the fall is only from 0·2 to 0·36 of a degree, whilst in an alcoholised guinea-pig exposed in the same way the fall may be as much as 18° F. One of Pasteur's best known experiments was that of placing a hen—a bird absolutely insusceptible to anthrax under ordinary conditions—with its feet in cold water, and thus lowering its

temperature until it became susceptible to this disease. We must, however, look even beyond this factor of temperature in our search for predisposing causes. Not only do the cells of the body, but the fluids in which these cells are carried which give material to, and receive waste or other excretory products from them, play an important part in resisting disease. It has been demonstrated by Ehrlich and his school that the introduction of certain bacteria or of their products, and even of certain albumens into the body, modifies these fluids in a most remarkable manner. For example, if Koch's new tuberculin—which is really an emulsion of dead tubercle bacilli—be introduced into the body of a patient, certain substances are formed in the fluid of the blood which have the property of rendering tubercle bacilli more readily taken up by the leucocytes. Similarly, if egg albumen be introduced in the abdominal cavity of the rabbit, it is taken into the blood, and in the process of assimilation by the body it appears to affect the cells in such a fashion that they secrete a substance into the blood which, added to egg albumen in solution outside the body, brings about its precipitation. Alcohol appears to interfere with these processes. Certain of the phenomena that appear when no alcohol is given fail to be produced when it is administered.

According to Ehrlich[1] the cells of our body may be looked upon as a central group of molecules, sometimes a very complicated group, around which are arranged a series of affinities, links or hooks—receptors or side-chains, as they are called. To these hooks other albuminoid groups are attached, and it is through the hooking on of these albuminoid groups that the cell is nourished. Without these side-chains it could not link on to itself the

[1] Ehrlich, P.: "Collected Studies on Immunity". English translation by Dr. Charles Bolduan. New York, 1906.

material it requires for its nutrition. These receptors or hooks have, as we have said, a special affinity for certain albuminoid molecules which, however, have to be linked on in a special fashion. Some of the molecules, acting as anchoring chains, have one form of hook at one end and another at the other; one hook holding to the cell, the other attaching the molecule to be absorbed. Without these intervening and accommodating links certain substances could never become connected up with the cell. This, the connecting link, is spoken of as a "fixative," and it is a curious fact that such links are also met with in the blood in considerable numbers. The fixation is very stable and is not destroyed by a high temperature. At the outer end of this fixative, and hooked on to it as it were, are certain groups of atoms which appear to be derived from living cells. They have certain characteristics similar to those of the ferments, and they are destroyed at a temperature of from 52° to 55° C. They appear to play a most important part in the nutrition of the cell, and, curiously enough, an equally important part in poisoning it. These are called complements or alexins. Abbott and Bergey[1] find that the administration of alcohol brings about a reduction in the number of these complements in the blood, and they hold that this reduction accounts partially, at any rate, for the impaired power of nutrition met with in alcoholised animals. They say that there are not sufficient complements to combine with the necessary nutrient proteids or albuminoid substances circulating in the blood. Further than this, however, they hold that the lack of these complements is important from the fact that without them it appears to be impossible for any immunity against disease to be set up in an animal. The complement is said to be

[1] Abbott and Bergey: *Centralb. f. Bakteriol. u. Parasitenk.*, 1 Abt., Originale, Bd. xxxii., S. 260. Jena, 1902.

derived from the white blood cells of the body, or from the connective tissue cells, or from both, and it is evident that this diminution in the amount of the complement present may be the result of lowered or markedly altered activity of the leucocytes and of certain other cells of the body. The diminished amount of complements in the blood may undoubtedly be associated with the diminished number of circulating leucocytes observed by Laitenan; and it may be accepted as an indication that the leucocytes are not capable of, or at any rate are not, responding to the calls that are being made upon them in connection with the nutrition and scavenging of the body, that they are not assisting in the production of the immunity that under the influence of special stimulating substances generated in the body should be going on during the course of infective fevers. It may be accepted then that alcohol interferes with the process of phagocytosis. Moreover, that the microphages and the macrophages—the cells both small and large entrusted with the scavenging work of the body—are by alcohol rendered less active, not only as regards their movements but also as regards their power of taking in foreign bodies and of manufacturing complements.

General Conclusions

Alcohol plays a prominent part in bringing about degeneration of nerves, muscles and epithelial cells; it determines the accumulation of waste products in the tissues by paralysing the tissue cells, interfering with oxidation, with secretion and with excretion; it induces the proliferation of the lower forms of tissue, often at the expense of the more highly developed tissues, which in its presence undergo marked degenerative changes; it interferes directly with the production of immunity against

specific infective diseases, and reasoning from analogy it may be assumed that it plays an equally important part in impairing the resistance of tissue to the advance of the active agents in the production of disease that may have already obtained a foothold in the body.

IV

THE PSYCHOLOGY OF THE ALCOHOLIC

BY

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Nature of the Ego

A SURVEY of the mental manifestations of people of different social levels and occupations shows that there are trends of thought which are presumably due to the habit acquired by the nervous system of acting in the line of least resistance, namely, in the paths in which it is specially educated, these paths being the indication of the most congenial supply of pabulum and of its selective association. The result of this harnessed energy is the "Ego," and the individual is the sport or the master of this "Ego," this psychosis, this mental mosaic—call it what you will—in proportion to his power of inhibition or guidance. There are on the stage some versatile actors who are equally at home in parts of contrasted emotional tone, but the majority have individual rôles, and their "business" is of a stereotyped form which they can only more or less effectually mask, and so it is on the stage of life, both in health and disease.

Varieties of Psychosis

In entering on our inquiry regarding the psychology of the alcoholic, it is necessary to realise that there are

several important varieties of psychosis. There is the *Psychosis cisiaria* (we all know the tight-trousered, thin-lipped horsey man when we see him), the *Psychosis legalis*, the *Psychosis feminina*, the *Psychosis sycophantiosa*, and to come to disease, the *Psychosis podagrica*, and, which immediately concerns us, the *Psychosis inebriata*.

Analysis of Motives and Conduct

A man is known, not by what he thinks, but by what he says and does, which are the objective interpretations of his subjective "Ego," as a rule, not always, certainly, but in the main; and much of our success in life depends upon the facility with which we can enter into modes of thought—the "Egos"—other than our own. Success in this is partly a matter of experience and of perspicacity; but it is really more, and is of the psychological order, as sympathy, or the power of assuming a condition which is the reflex of another's state. To talk of the "Psychology" of a line of conduct is then to enter into the motives, the emotions, the trend of associated ideas of the individual which postulate the actions which are at the moment to be criticised, at one time drawing an inference as to the cause from the result before us, at another looking out for results which should eventuate from what we suppose to be a cause. It comes very glibly off the tongue to say, "Put yourself in his position," "What would you have done under those circumstances?" but if self-analysis is difficult, how much more so is it to appreciate the "Ego" of another, to penetrate within the veil of the maimed and debased inner temple of the debauched inebriate? It requires the pen of an alcoholic De Quincey to retail in his graphic manner the memories of his past experiences—a man who has the power and the courage to lay open the cravings and the writhings of his past slavery, and to com-

pare them with his emancipated self, blurred and attenuated though the recollection may be. An authoritative statement of this kind would be a confession much after the manner of the repentant sinner, or the converted burglar, who now and then comes forward to relate the "Ego" of his earlier backsliding, and in the absence of any exponent of this self-immolation all we can do is to note some of the chief objective signs of the inebriate mind, superadding a few speculations as to what may underlie the degradations with which we are all only too familiar.

Appetites and Cravings

No word is more used in connection with alcoholism than the term by which we express the strong desire for drink, the "craving". We shall see that as appetite is the somatic index of the normal body, so craving may be taken to be the somatic index of the disordered one. Life is full of appetites and cravings, some of them leading to harmful indulgence, others simply to the degree of repletion necessary to maintain the balance of metabolism, or of waste and repair. The desires to eat and drink, to smoke and to take drugs are really appetites or cravings dependent on varying bodily conditions; and there are psychical cravings, too, such as are expressed in general terms, as thirst for knowledge, craving for pleasurable excitement, whilst mere satiety is denoted by saying that a person has "had his fill".

Appetite and craving have come to be used for conditions implying natural and morbid impulses. An appetite for food is natural, a craving denotes that an unnatural condition has to be satisfied; so a taste for alcohol may be natural, but a craving for it connotes considerable excess. An appetite may become a craving, and many cravings are founded on legitimate appetites. In both appetite and

craving we note the element of time, of habit and of periodicity. Even in the inebriate this rhythmic process is noticeable. Under ordinary conditions we are hungry or thirsty at about the same time every day, and the word "meal-time" means not only that a certain hour has arrived, but that the periodical desire has arisen, and must be satisfied. It is probable that the idea of time in many animals is solely that of the feeling or appetite for food in accordance with the rhythmic habit. Appetite disappears with repletion, or satiety, but with craving the intake is continued; thus the gourmand stops when his palate is satisfied, the merely thirsty man when he has had his fill; but the inebriate drinks as long as he is able to do so, although he has no compelling thirst; the inordinate smoker keeps on though his tongue may burn and he derives no pleasure from the continuance; the opium-taker stops only when he is incapacitated.

Influence of Habit

Say, if you will, that "habit" is at the root of vices; it means neither more nor less than that an artificial state has been set up, which can only be changed by a stoppage of the supply of material which feeds the conditions. It is useless to moderate the inordinate smoker's tobacco, it must be stopped altogether; so with alcohol, so with opium. Can we not see the same on the mental side? To get quit of an obsession we must have an entire change of ideas; to break through the habit of waking up at the same hour we must take measures to sleep through the critical time.

The Nature of the Alcoholic Craving

The question as to the real nature of craving is variously interpreted by different authorities. Dr. Arch-

dall Reid[1] says: "It cannot be too strongly insisted on, or too often reiterated that the craving for alcohol, like sexual love, is an instinct, not an acquired trait". Dr. Ford Robertson[2] on the other hand says: "I have long maintained that the specific craving for alcohol is never instinctive, never inborn, but always acquired, and therefore that no man ever craves for alcohol who has not had previous experience of it. As a specific habit it has its origin essentially in environmental influences," which means that men only take alcohol because it happens to be there, and that it is not a necessary food. The same may be said of a hungry man in a country which produces food of only a certain kind; he may appease his hunger with what he can get, and if he has never experienced other kinds of food he has no idea of them, and therefore neither appetite nor craving for them. A person may live on rice, milk or dates, and may desire nothing else if he has never had experience of other food, so that as long as there is enough, quâ food, and that food contains all the elements necessary to the proper nutrition of the tissues, there would appear to be neither the desire nor the necessity for alcohol. But it is often urged that there may arise conditions in which, conceivably, alcohol, or some rapidly diffusible and quick-acting food is necessary—such conditions as great physical exhaustion, impaired action of the heart, sudden nervous shock, etc. Under these circumstances it is generally called a "stimulant," but why should it not also be a "food" if it serves to restore function by rapidly supplying (? evoking) tissue energy? It probably is actually a food of a temporary kind, but the fault of the inebriate is that he makes it his universal food, which it cannot be. Alcohol is responsible for much disease, and for many deaths, but many contend

[1] Reid, G. Archdall: "The Present Evolution of Man". London, 1896.

[2] Robertson, Ford: "Alcoholism". 1901.

that people have died from the want of it at the right moment. What was found to be serviceable at a crisis is owing to its agreeable qualities, made to become a habit, and finally develops into a willing necessity, just as may be said of many other acts and desires which, at first mere physiological necessities, grow or are fostered into destructive habits.

Many and diverse as are the foods of to-day, it is easy to conceive that at any moment a food or a drink might arise which, at present unimagined, would excite an irresistible craving; a very Ambrosia, but with the penalty of immortality as a result of over indulgence.

But there is another way in which a craving may be viewed, a mode of estimation which points to a less harsh judgment of it, and makes it indeed a possible beneficent agent. Does a craving denote an altered physical state which requires its own peculiar mode of nutrition? This view has been elaborated by Dr. Harry Campbell,[1] and it is plausible, but it is guess-work, because we cannot appreciate correctly the changed state, the modification of tissue with its attendant feeling which requires nourishing in a certain way.

Mental Characteristics of the Alcoholic

Although much is known of the way in which nerve tissue is damaged in alcoholics,[2] it cannot be said that we know much about the ordinary action of alcohol. We cannot say whether, when an individual can take large quantities of it without visible impairment, he owes his immunity to good digestion or to a particular composition of his nervous system.

[1] Campbell, Harry, M.D.: "The Alcoholic Craving". *The British Journal of Inebriety*, July, 1906.

[2] Horsley, Sir Victor: "The Effects of Alcohol upon the Human Brain". *The British Journal of Inebriety*, October, 1905.

The key to the interpretation of the chief objective features of the alcoholic's mental peculiarities is to be found in two theories, the one in the doctrine of inhibition, the other in that of "the muscular element of thought."[1] By the former we mean the guiding or controlling power which the higher and later developed nervous centres have over the lower ones, a power which attains its maximum in the highest centres of the brain when they are "at the top of their form," untrammelled by any exciting or depressing agent such as alcohol or a narcotic drug. By the latter we mean the muscular memory, which forms part of every mental "content".

Among concepts, in actual concrete ideas, the fine muscular movements which are the foundation of our ideas of space, size, form, distance, weight, etc., which are with difficulty and at a late period acquired and incorporated, are in accordance with the law of evolution the first to go, and with their disappearance is introduced a new element, that of a not understood, and therefore misapprehended difficulty in the carrying out of ideas; hence a feeling of resistance, and a natural inclination to account for it. Among the patients at the Norwood Sanatorium for Inebriates, it has been noted that eye-strain from refractive errors, night-blindness and choroido-vascular changes have given rise to conditions of alcoholism.

Morbid Nature of the Alcoholic

In what are called the toxic insanities one of the most prominent forms of delusion is that of suspicion, and this is a characteristic of the alcoholic. It makes him quarrel with his friends, because he thinks that there is some concealed and treacherous motive in the background. This

[1] Lewis, W. Bevan: "Text-book of Mental Diseases". London, 1889.

above-explained feeling of resistance cannot, argues the inebriate, arise in himself, therefore it must be caused by somebody, and who so likely to be obstacles to his well-being as those with whom he is in social contact and who know most of his affairs? These aroused ideas become more complex in accordance with the laws of similarity and contiguity, and thus an entirely fictitious world is created for him, peopled with phantasies which must continue as long as their organic basis lasts. If the lesion is permanent, so must the change in the "Ego" be accentuated, until at last a new self is created, which fails to recognise that it ever was anything else, and which proceeds to harmonise everything with the new state. As the new consciousness is the compelling mind of the moment, any weakening of which he would spurn as losing guard against imagined pitfalls, he does all in his power to strengthen his defences. Feeling additional aid from the ingestion of alcohol, he continues the indulgence because it is to him an agent without which he loses grasp of his identity. For him it is no poison; it sustains his being and he will have it until overpowered by excess, or stopped from indulgence by forced sequestration. Here again the question of craving is one not so much of indulgence in a pleasurable self-gratification, as if an urgent compulsion to supply a need or a food. The inebriate is not a slave to his habit in the sense that he is cherishing a voluptuous indulgence; on the contrary, his supposed "liking" may be a myth, positively distasteful and abhorred on the sensual side, and only fed because of its necessity for the maintenance of a condition, the falsity of which he is unable to appreciate.

Mental Instability of the Alcoholic

Another prominent feature of the inebriate is mental restlessness and explosiveness, co-ordinates of a wasted

inhibition. The increase of introspection—"subject-consciousness," as it is usually termed—renders him incapable of attending to what is passing around. There is a loss of the sense of awareness of surroundings, hence accommodation has to be suddenly brought about, and there is failure in the co-ordinated purposiveness of one who is able to pursue the even tenor of a regulated life. Only when the "Ego" is changed can we understand the failure of the new individual to adopt what seems unreal and alien, besides which the gradual supersession of the old by the new condition must set up doubt and uncertainty, dissatisfaction and shiftiness, leading to restlessness in his attempts to adapt himself to what is going on, and to sudden changes of conduct which rank as explosiveness.

Voluntary and Impulsive Action in the Alcoholic

Nothing is more certain than that for the highest and truest acts of will, anything like undue excitability of nerve tissue, an excess of emotional tone, any hurry or impairment of the elements of a volition complex, *viz.*, good memory, power of attention, free passage of thought-currents, etc., will reduce the act from true voluntary action to one of impulse; and if we accept Wundt's law that the ultimate cause of will is to be found in the social environment, it follows that the alcoholic being incapable of interpreting his environment correctly cannot perform acts of will with proper deliberation; hence he is impulsive.

Forms of Mental Incompetence

What, let us ask, are the signs of a well-developed, unimpaired mind at its zenith? Calmness, steadiness, sound judgment, absence of impulsive action, good abstract memory, coherence and correct muscular co-ordination. And what does the psychology of the alcoholic show?

Restlessness in place of calmness; tremor in place of steadiness; impulsive instead of deliberate action; loss of memory, incoherence, lying, difficulty in walking, and finally, moral turpitude and a state of antagonism to the existing social order.

Neuritis is the cause of many of the false ideas of the inebriate. It leads to persecution ideas, and is an indication of severe structural impairment.

Impairment of Movements

The staggering movements of drunkenness, or acute alcoholism, are represented in the chronic inebriate by loss of spontaneity, owing to injury to the centres of co-ordinated reflex movements. Either from neuritis, vitiated composition of the blood, or central degeneration, the victim experiences giddiness and difficulty in walking. He has to *think* of his walking, and as he goes about with his head bent, and his eyes on the floor, he is afraid of stumbling and feels much safer when using a stick or when close to a rail or a wall. Hence he develops an *agoraphobia*—a dread of open spaces, of crossing the road lest he should slip down, and be run over, and from having to concentrate his attention on his steps he is incapable of the necessary awareness of traffic. His friends say that he has become reserved and shy, whereas he is simply introspective in his own interests. They say that he has developed nervousness and timidity, when he is but acting cautiously from experience. Then come other muscular failings in the accuracy of purposive movements; the handwriting becomes shaky and the writer uses a lead-pencil, if available, instead of a pen, because, for some reason not quite clear, a pencil is more flowing and less tremulous. A stylographic pen is anathema-maranatha to the alcoholic. In order to raise a glass or a cup to his

lips he resorts to all sorts of devices; he has it placed nearly on a level with his mouth, or instead of lifting it he reverses the process, and stoops down to it. Almost comic are the shifts these people resort to for hiding the stigmata of degeneration; the excuses they make for putting off the performance of voluntary acts in the presence of others, the lies they tell in inventing reasons for their omissions and commissions, most of which moral decadence may be traced to failure in the muscular element.

As these muscular changes are more felt by the patient than they are manifest to the outsider, and as many of them may cease when the body is at rest, the alcoholic takes the opportunity to sit whenever he can, to ride where he used to walk, to be silent instead of communicative; hence he is said to be lazy or extravagant, to have become stupid and uninteresting. Never perhaps were motives so misjudged by others as they are in the alcoholic, but it is unfair to stigmatise them as cowards; they are capable of brave acts, and their futile attempts in clutching at propriety are merely struggles to make others believe that they can still preserve their social equilibrium, though they are themselves conscious of their feeble hold of the balancing-pole.

Psychological Changes due to Circulatory and Visceral Lesions

Impairment of the circulation, due to heart-failure and degeneration of arteries, accounts for many psychological defects. The continued over-stimulation of the heart leads to dilatation and irregularity, and to loss of elasticity in the small blood-vessels; hence the lassitude and faintness, the incapacity for mental and physical exertion which lead to business laxity and failure to keep engagements, resulting in a resort to that stimulant which sets

up a spurt, saving perhaps the present situation, but hypothecating the future.

Religious and Sexual Abnormalities of the Alcoholic

Other interesting features of the alcoholic mind are rise in sexuality and in religious emotionalism; the former due not so much to increased activity of the sexual organs as to stimulation of the sexual memories; the latter either similar to that peculiar supervention of this class of ideas which is one of the features of the epileptic temperament, or else to the victim's feeling of ineptitude, and his recourse to a means of salvation from a condition which is too hard for him to bear, that is to say, Fear is at the bottom of his new convictions.

Moral Degradation of the Alcoholic

The moral degradation of the inebriate is the completion of the sad falling away of brilliant possibilities. If we are asked the chief features of the unbiased, judicial mind, we should probably associate them with serenity and deliberation, and with the minimum display of emotion and sentiment. Any one of experience in "social amenities" knows how very strained and formal is the entrance into the reception-room of the guests, and how ceremonious is the opening of the entertainment. After the wine has flowed round all this is changed; talk takes the place of silence, familiarity that of reserve, matters are freely spoken of which erstwhile were carefully ignored. That means a decadence in the judicial tone, and a loss of the mastery over sensuous impulses, and a perceptible attraction within the vortex of easy compliance. Carry this a little farther, and make the occasional state a more or less continuous one; we have then no difficulty

in seeing how the moral tone, which is the elaboration of the highest intellectualism, must suffer. The standard of duty is relaxed, because the individual is too much under the engrossing stress of the moment; he cannot wait to consider the consequences, because he is hurried on to fresh ideas which involve no trouble or exertion on his part, and so he is led into dangerous situations, from which he has no power to escape, the summation of which we call "moral obliquity".

If more were needed to show the reduced mental condition of the alcoholic, we might adduce the fact that he becomes subject to control by others of strong personality in the form of treatment by "suggestion".

The Alcoholic's Catastrophe

The man who drinks is always in danger. He of necessity loses his rudder—his control—and is at the mercy of other people, and of his own unrestricted motives and impulses. He is a risk to the community, and he finds that sooner or later society imposes on him the fetters which but for his own folly he need never have worn.

V

ALCOHOLISM AND MENTAL DISEASE

BY

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Characteristics of the Brain Age

THE age we live in has been aptly termed the "brain age," and certain it is that this is not only an age of enforced brain activity but also one of extreme nervousness or neurotism. For the Anglo-Saxon there is some evidence that he is drawing near to the summit of his intellectual attainments, and from the decree of biological evolution it would seem that in his case—as with other peoples which have preceded him—there is a limit to his advancement. This limit is evidenced by the prevalence of mental and nervous instability. Nature would seem to revolt against the too rapid evolution of the nervous system in comparison with other systems, and in the occurrence of neurotism we see but Nature's decree and the threatenings for human beings of a return to mediocrity. That this is true for the Anglo-Saxon race the evidence is almost overwhelming. Were we provided with complete statistics relating to those who by reason of mental and physical infirmity are incapacitated from

competing for, or even aiding in, their own survival, we would realise more completely the existence of a national debility, the insidious onset of which has been aided in no slight degree by the use and abuse of alcohol.

At one time it was thought that education was to raise the people from their condition of poverty and drunkenness, and with the impetuousness of the Briton all the hopes of amelioration were centred in the rising generations. These hopes were all placed like eggs in the educational basket. The result has been far reaching and remarkable. The artificial standards of mental acquirements set up by the educational authorities have proved the existence of a large percentage of children whose minds are literally addled and incapable of natural development, and in numberless instances the educational process has served but to remove the mental weaklings from the fields where they might live and work and remain sane, to the towns where they endeavour to compete in the struggle for wealth and position, and in so doing exhaust their stores of nervous energy and succumb to factors which heredity and environment had but ill-predisposed them to overcome.

Modern Stress and Strain and the Resistance of the Individual

Public health policy ought undoubtedly to be directed to increasing the fitness of individuals who comprise the community, and to the removal of any excessive strain on them due to environment; but before we can hope to attain to any really good or permanent results, we must, on the one hand, fully estimate the nature of the strain, its causes and its remedies; whilst on the other hand, we must measure up the fitness of the individuals, the causes of their fitness or unfitness, and adopt the hygienic measures necessary to the case.

The cause of this strain upon the people may be summed up in a word, "overcrowding," with its inevitable retinue of evils, *viz.*: pauperism, famine and disease. This condition, with its train of symptoms, is brought about not by increased fertility of the Anglo-Saxon race—for that has been proved to be the reverse—but partly by the invasion of our land by hordes of aliens who mostly come as social wreckage from other lands to clog the wheels of our constitution, and to harass and impede the evolution of our race. In a discussion held by the Society for the Study of Inebriety,[1] I endeavoured to show that the British character is undergoing a remarkable psychological change. With the urbanisation of the people and the prevalence of alcoholism and other habits detrimental to mental and physical efficiency, there is creeping over the country a hebetude and lassitude which impair resisting powers, and inhibit the natural protective mechanism. And there is some reason to believe that this parasitic spread of the alien is dependent in great measure upon the lowered efficiency of our people and the diminished resisting power of our nation. The alien problem, therefore, while it helps to explain overcrowding as a symptom, does not throw any light upon this factor of diminished resistance by the people.

The Methods of Civilisation

Civilisation means exposure of the limits of a general advancement, or difficulty in reaching a definite standard of efficiency, and as the struggle increases in complexity and severity, the stress and strain for survival tends but to gradually raise the minority and submerge the majority. That this is true for physical and mental life is evidenced

[1] Hyslop, T. B.: "The Vitality of a Nation". *The British Journal of Inebriety*, April, 1906.

in the history of every decayed nation. The policy of removing children from the gutter in order to improve their capacity for resistance and survival, is only in part efficacious, for the real gutter of the pauper child is something more than an unsavoury environment, namely, its parentage and a heritage of disease brought about by indulgence in alcohol and other things from which mere change of abode is powerless to eradicate.

From such an environment as theirs it is of course expedient to remove them as early and as completely as possible, but the mere transplantation from slum to board school is insufficient. It should be to the fields, the air, and the sea, where the young lives can expand and develop, and, more important still, to a habitat where it is possible to retain the mental faculties—rudimentary though they may be—which enable them to remain independent and free citizens of our empire beyond the seas.

The various schemes on foot for the complete removal and transplantation of some of the rising generation to our colonies form a decided step towards relieving the distress from overcrowding. They favour the development of the young and tend to arrest their premature decay, but they also favour the attenuation and diffusion of much that is needed to maintain the efficiency of the mother-country.

Drink and Disease

Nowhere is legislation of more imperative need than in regard to the ordinary rules of sanitation for drink and disease. England's greatest vice is that of drunkenness. It seems to wallow in its gutter of beer and spirits, losing all sense of individual responsibility, sapping its own energies, deadening its susceptibilities, and cursing its progeny with a heritage of disease and a deplorable inefficiency to add to the health and vigour of the race. It

has demonstrated to the full that with the so-called increase in its trade extension and its condition of so-called intellectual advancement, it is nevertheless deficient in its resistive mechanism and unable to say nay even to its poisons.

Our municipal authorities pride themselves on the excellence of their hospitals, prisons, asylums and other receptacles for the wreckage of civilisation. It is, however, of doubtful economy, and rather suggestive of a misapplication of public funds to cripple the means available for health and prevention of disease by a disproportionate outlay for the provision of so many palatial receptacles for those who are biologically unfit.

From being a nation of robust and physically fit people we have long since earned the reputation of being a nation of shopkeepers, and it remains to be seen whether we shall in the future reserve the mother-country merely as an asylum for the dregs of the race. That this is the policy at present pursued is evidenced in all directions.

The Mental Struggle for Existence

The effects of rural and urban life have never been accurately or comprehensively determined. I have repeatedly drawn attention to the fact that in our endeavours to raise the people so as to enable them to enter upon a mental struggle for existence we are denuding the country districts. This arises from the setting alight of an ambition to migrate to the cities, where the struggle for survival is continued under circumstances totally at variance with what has been destined for many both by habit and heredity. For such people, the stress and strain of city life is disastrous, and the step from country to town is but one of the commonest of all the steps towards mental and physical degeneration; the accidents of civili-

sation, such as alcohol, disease and incidental stress and strain, finding in them merely the readiest victims. The necessity of this migration, as determined by our methods of trade and neglect of agriculture, makes it none the less an evil, and it forms a symptom in the evolution of an essentially agricultural race which is fraught with extreme danger to the maintenance of its nervous and mental stability. This migration also leaves its stamp upon the rural districts, where the residuum is not only weak and degenerate, but there is apt to be intermarriage of near relations and the production of a relatively greater number of lunatics.

The Nervous Instability of the Modern Woman

The tendency of women to depart from the fields of domesticity to those of sedentary occupations also aids in the production of nervous instability. The causes of the relatively greater increase of insanity in females is interesting. Pregnancy, parturition, the puerperal state, and other conditions incidental to the female sex, are greater sources of danger in the new modes of life, and the females are less fitted to withstand the strains upon their systems. Worry, overwork, adverse circumstances, domestic troubles and other mental and moral factors more readily upset constitutions fashioned in the nervous mould so prevalent nowadays. Certain it is that alcohol more readily affects the nervous systems of women than formerly.

The Action of Toxins on the Brain

One aspect of the question is of great significance and importance. Poisons (including drugs and all other toxins be they generated within our bodies or derived from without) prove more rapid in their action on the nerve sub-

stance and more deleterious in their results as individuals and communities rise higher in the scale of mental complexity. The order of devolution is that the latest and highest, and therefore the least organised and least stable, of acquirements are the first to degenerate. Hence it is that when a race attains to great intellectual heights its complex nervous mechanism is less resistive and less tolerant to the effects of toxins. One frequently sees this law exemplified with regard to alcohol, and in the evolution of families the sins of the parents are visited upon the progeny. This intolerance of alcohol by those who have inherited or acquired a complex and unstable nervous mechanism is becoming more and more patent to us all, and it was no exaggeration when I stated that so intolerant are we, of the present generation, to the effects of alcohol that were we to emulate the example of the four-bottle men of old we would soon find ourselves within the four walls of an asylum.

One ray of hope exists for us in the spread of the knowledge that intellectual evolution brings with it antagonism to the use of toxins which prove ever more deleterious in proportion to the degree of complexity of the nervous mechanism. It is to be hoped, therefore, that as man gradually becomes more civilised, he will also gradually diminish his consumption of that to which he has become less tolerant.

Alcohol as a Cause of Insanity

All observers are in the main agreed as to the deleterious effects of alcohol on the nervous system, and I have endeavoured to show that the strain of civilisation renders the nervous system more liable to suffer from the effects of alcohol. With regard to insanity there is some difference in experience as to the relative frequency of alcohol in its

causation. This difference ranges from between 10 to 30 per cent. When, however, we consider the effects of alcohol in producing poverty, in rendering an individual prone to acquire specific disease, and in bringing about the numerous other factors of causation of insanity, and when we recall the frequent instances in which alcoholism in one member of a family has worried other members into a condition of insanity we realise that it is well-nigh impossible to fully estimate its baneful influence. My own experience leads me to believe that alcohol is either a direct or an indirect factor in the causation of at least 50 per cent. of the cases of insanity. When considering alcohol in relation to mental diseases we have to consider not only the action of the alcohol upon the nerve substance of the brain, but also the nature and constitution of the brain upon which the alcohol sets its stamp. It is fully recognised that indulgence in alcohol is not always responsible for the drink craving, *i.e.*, the craving may exist as an insane factor and the alcohol be but the accidental object of the craving. In such instances the prohibition of alcohol would not alter the brain state for better or for worse. When, however, alcohol has been indulged in and has set its impress upon the finely constituted mechanism of the nerve cells and their connections, a series of morbid phenomena is apt to arise and from which nothing but the prohibition of alcohol can serve to ameliorate.

The Action of Alcohol on the Brain

The action of alcohol upon the brain may be summed up as follows: When administered in sufficient quantities it may produce not only arterial degeneration but also sclerosis of the brain substance, with varying degrees of destruction of the nerve cells and their connections.

Cytoclasis or death of the nerve cell occurs when its nucleus is destroyed, and for such a condition cytothesis or regeneration is impossible. Cytolysis or incomplete degeneration of the nerve cell occurs where the alcohol is given in insufficient quantities, or where the powers of resistance in the cell itself are sufficient to overcome the effects of the alcohol. It is important to note that the so-called selective affinity of alcohol for various portions of the brain and its tendency to cause cytoclasis of the cells of certain regions depends mainly upon the condition of these cells themselves. As an illustration of this I would instance the frequent occurrence of hallucinations of hearing as chronic symptoms in the insane and apparently due to disease in the proximity of the auditory areas. The disease of this area has been as much due to over-stimulation of the auditory sense as to the alcohol. The constant excitation of any one sense or sensory fibre system tends to exhaust the nerve cells and lessens their capacity for regeneration when alcohol comes as an incidental factor to attack them. Hence it is that alcohol acts upon brains already more or less vitiated and rendered in part incapable of resisting or overcoming its effects. In practice it is usual to find that toxins are primarily diffuse in their action and affect all the sensory and motor areas of the cerebral cortex. Later, however, recuperation occurs where cytoclasis has not taken place, and where regeneration is found to be impossible in any locality by reason of exhaustion or even death of the nerve cells the symptoms suggest what has been regarded as a selective affinity of the alcohol for those regions.

The various forms of insanity due to alcohol, such as the motor or sensory types, are brought about in these ways, and full descriptions of these types are to be found in textbooks on mental diseases.

The Rôle of Alcohol

In my experience of nervous and mental diseases, I am of opinion that alcohol is of little or no use except in some cases where it may be administered as a temporary expedient to overcome a crisis. The rôle of alcohol in the nervous and mental economy is in the healthy individual an evil one. Stimulating the worn-out machinery by improper fuel is unproductive of good labour. "Capital" which fulfils the whole of its office in the production in which it is engaged by a single use is called "circulating capital". Alcohol does more than this. It interferes with the "fixed capital," and the "wages fund" of the bodily institution is in consequence ultimately diminished. In the economy of the healthy body the use of alcohol may be likened to a loan with heavy interest, advanced to increase temporarily the wages fund essential for the production of immediate labour, without which loan for immediate use, and failing reinforcement to the "wages fund" from other sources within the internal bodily economy, physical bankruptcy is prone to occur. In my opinion, therefore, the use of alcohol is justifiable only as a loan to help to tide over a bodily crisis until the bodily organism can repay the loan together with its accumulated interest.

The Pathology of Alcoholism

This accumulated interest is to be found in the occurrence of increased vascularity and degenerative changes in the coats of the vessels. I have elsewhere[1] referred to the part played by the inflammatory exudates, that of alcohol in the exudates, and their combined effects upon the nutrition and metabolism of the nerve structures. It

[1] Hyslop, T. B.: in Prof. Clifford Allbutt's "System of Medicine," vol. viii., p. 324 *seq.*

must suffice here to repeat that when alcohol is conveyed to the plasma the metabolism of the leucocytes is retarded—owing to the deprivation of the tissues of some of its oxygen, and retention and proliferation of the exuded material results. The using up of oxygen for the destruction of alcohol is clearly, therefore, a retarding process in the proper metabolism, and we have in this way a tendency to the development of more stable but less highly developed tissues.

To attempt to discuss all the further relationships between alcohol and insanity would be quite impossible here, so I shall conclude with the mere statement that in spite of the evidence of the ravages of alcohol in filling our hospitals, our prisons and our asylums, there is gradually creeping over the country a more intelligent appreciation of the fact that if we are to maintain our health, our morals and our sanity we must set ourselves with renewed vigour to the task of averting disaster by overcoming the curse of alcoholism.

VI

MEDICO-LEGAL RELATIONS OF ALCOHOLISM

BY

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WHERE a man by his own act knowingly intoxicates himself with drugs which reduce, at times permanently, his mental altitude, which rob him of his common sense and his power to resist evil, which abrogate the feeling of responsibility for his acts, and which may divert his mind into a dangerous delirium, how far is such an one rendered *non compos mentis?* Should he be allowed to plead his self-debauched mental condition in mitigation of, or in relief from, the results of some untoward conduct? May he be permitted, as a matter of public policy, to enjoy the privileges of private life accorded to citizens of sound mind and memory?

The Views of Lawyers and of Medical Men

Lawyers, whose main concern is with the legal responsibility of such persons, seldom coming into professional relation with a number of the victims of alcoholic drink, must look to medical men for clinical facts upon which forensic positions can be based. For half a century in this matter penologists have sought from pathology

answers to the questions which their grandfathers propounded to theology.

It is now known that the errors and terrors of drunkenness arise from combined sources: weakmindedness often contributes more abundantly than wicked-heartedness. The treadmill was seldom a great invigorator of weak backbones, and the routine punishment of inebriates has proved as illogical as lashing the Hellespont.

Medical men, during recent years, urged both by a growing lay public opinion and by their own clinical observation—for they of all professionals see men "as they are"—have set themselves to know and to acknowledge the notorious mental debasement which leads to and which is accentuated by the abuse of "drink". They recognise several distinct types of inebriety, the fusion of which by writers has led to a confusion of thought.[1]

Types of Alcoholic Intoxication

Apart from complex mixed types there are the following classes:—

1. The occasional drunkard who may be "riotous, quarrelsome, violent and disorderly," and whom summary punishment often effectively and effectually corrects.

2. The confirmed toper who is as much the victim of drug-habit as the opium-eater; he may have amnesic dream phases, during which he may commit automatically offensive acts while he is mentally irresponsible.

[1] Consult: "The Medical Jurisprudence of Inebriety". *Transactions of New York Medico-Legal Society.* New York, 1888.

Atkinson, Stanley B.: "Some Medico-Legal Relations of Intemperance". *Edinburgh Medical Journal,* June, 1905.

Toogood, F. S.: "Irresponsibility and Alcoholism". *Transactions of Medico-Legal Society,* vol. iii. London, 1906.

Freeman, S.: "A Guide to the Statute Law against Drunkenness in England". London, 1906.

Rarer classes are:—

3. Dipsomaniacs with periodical recurrent crises and intercurrent lapses into sobriety.

4. Those who develop acute alcoholism, *delirium tremens*, *mania a potu*, or forms of impulsive insanity. These occur especially after a heavy bout or a fraudulent imposition. In the former case an accident may lead to an abrupt abstinence; a deceptive pause, almost analogous to an incubation period, may precede the exacerbation whose specious activity may first manifest itself after seclusion and under observation: as in prison—otherwise and elsewhere such acts might be considered as criminal.

5. Excitable persons and those who have suffered recently from concussion, sunstroke or epilepsy may have a latent insanity uncovered by a comparatively small amount of "drink". Men have become drunk without any such desire and without imbibing the quantity of "a strange drink" which they imagined would endanger their sobriety.[1]

6. Lastly, there are the insane from chronic alcoholism, forming 20 to 30 per cent. of the county asylum patients, whose residence there is due to the intemperance of their parents or of themselves.

Drunkenness has to be distinguished clinically from certain other mental diseases which exhibit physical excitement on the one hand, and profound depression on the other hand. All abusers of alcoholic drink do not, however, become periodically stupefied into collapse, nor do they all develop permanently hardened livers; the nature and substance of the "drink," the habits and the sex of the drinker are major factors of the total result.

The signs of drunkenness are easily feigned and the condition itself is difficult of definition.

[1] R. *v.* Mountain, Leeds Spring Assizes, 1888.

Mental Characteristics of the Drinker

The key to the mental situation caused by this besotting sin is the abrogation, total or partial, of the faculty of inhibition, self-criticism and the innate sense of human responsibility. A little "drink" slackens self-control and may loosen the passions—*qui a bu boira*, often more of the beverage is imbibed fallaciously to put the drinker right!

Mental perversions and forgetfulness result in obnoxious deeds: obvious lies, petty pilferings, suspicious self-accusations, false confessions and delusions as to the real condition may be exhibited; the brute may work out in passional offences against those who are really near and dear.

Town life and spirit drinking generate the incorrigible types too often found in the darkest areas of the magpie maps of the sociologist—areas which are lighted largely by the *ignis fatuus* of the gin palace.

Some Legal Penalties

Drunkenness, as such, is not penal; a man is within his legal rights in "drinking to excess". But if he makes himself "legally" or "sufficiently" drunk, and in addition his conduct is associated with personal incapability or with public disorder, in some half-dozen instances, where his exhibition is under circumstances peculiarly dangerous to others, the ordinarily optional fine may be replaced by imprisonment at the discretion of a court of summary jurisdiction.

The landlord who allows a drunken man—including himself during open hours—to be on his licensed premises, the conductor who carries a drunken man in his public conveyance, and the salesman who allows a drunken man to purchase a pistol, are all liable for such a prohibited act.

Legal Responsibility

If contemporary drunkenness is proved, both a contract and a will made by a person so affected may be avoided. The mere reputation of being a toper is of no assistance, however.[1]

Defamation, assault or negligence cannot, however, be excused on account of the drunkenness of the wrongdoer; in dealing with a drunken man he must be treated as if he were a dangerous animal, but excessive precautions need not be taken.[2]

Insurance companies have contested many claims on the ground of alleged inebriety, and whether that condition constitutes "grave misconduct" in a servant has been canvassed.[3]

In criminal law drunkenness does not necessarily excuse a criminal act, for it does not disprove the presence of malice or "evil expectation," unless a definite proof of intention is specifically postulated before the alleged crime can have been committed.

Lawyers assert that a mental disease may be maximised by voluntary vice, that punishment may be indicated in spite of alleged, and even some forms of actual insanity, and that disease *per se* is not a criminal defence. Sir James Mackintosh enunciated one forensic position: "This execution will not deter drunkards from murder, it only deters men who are sober from drunkenness". Sir James Stephen in 1881 recognised that "drunkenness is one thing, and the diseases to which drunkenness leads are different things". Sir Henry James, speaking officially,

[1] H.M. Advocate *v.* Dingwall [1867], 5 Irv. 466.

[2] Murgatroyd *v.* Blackburn Tram Co. [1887], 3 T.L.R. 451.

[3] As to the defamation of drunken officials see Sutton *v.* Plumridge [1867], 16 L.T. 741, and Battersea *v.* Martley Guardians, Worcester Spring Assizes, 1904.

stated that he was "unable to quote any general or definite rules" in connection with drunkenness and crime.[1]

Alcoholism and the Coroner

The inquest jury, in the Coroner's Court, may have to inquire into a drunken man's suicide or death by accident; a person may have been slowly poisoned by alcohol administered by himself or by others;[2] death-certificates may have been incorrectly filled in to avoid offence to the family of the deceased or to secure a policy of insurance. Deaths of those entering a retreat must be reported to the Coroner.

Alcoholism in Lunacy Law

At present the Habitual Drunkards and kindred enactments only embrace the victims of "intemperate drinking of intoxicating liquors," which beverages, by reference to the previous Licensing Act, 1872 (Sec. 74), must be interpreted as including solely "any fermented, distilled or spirituous liquor" which is exciseable, and not any "sedative, narcotic or stimulating drug or preparation" such as if persistently taken leads to a general malady characterised by a debasement of the moral sense—*narcomania.*

The Lunacy Law has a very limited application to inebriates as such. This fact led to the special legislation for the temporary restriction of the personal liberty of chronic alcoholic narcomaniacs. In 1802 Lord Eldon gave his opinion that a commission of lunacy might be applied to consider "cases of imbecility of mind, to the extent of incapacity from any cause: as disease, age or habitual intoxication";[3] there is indeed no record avail-

[1] *The Times*, 5th January, 1892, and R. *v.* Dompig, *The Times*, 14th January, 1904.

[2] R. *v.* Paine [1880], 91 Cent. Crim. Ct. 537.

[3] Ridgeway *v.* Darwin, 8 Ves. 65.

able of such an appointment. Only where "drink" educates a true but hitherto latent insanity, or otherwise produces a definite type of mental alienation, either ancestral or original, are the Lunacy Laws operative.

The jury's recommendation to mercy of a prisoner convicted upon a grave indictment, whose sin was committed while in a state of intoxication, is really a recognition of an inherent weak-mindedness, little short of insanity; the logical verdict, if not reduced, is usually followed by a mitigated punishment. The lawyer's test of the presence of lunacy (*i.e.*, non-responsibility): "Did this prisoner know at the time that he was doing wrong?" has been applied occasionally but vainly to cases of admittedly drunken insanity, other than delirium tremens. Delirium tremens, though temporary in nature, is voluntarily produced, or rather the precedent, excessive "drinking," was voluntary; the law, however, treats victims of this mental aberration as madmen.

Attacks of delirium from any cause are not specifically provided for by the Lunacy Law. Nevertheless, acts, otherwise criminal in nature, perpetrated by one in a fit of delirium tremens, will be regarded forensically as the deeds of a sufferer from temporary insanity, incidental dementia. The above omission from the law relating to the insane enforces a practical point bearing upon the clinical management of inebriate patients.[1] It would be both impolitic and illegal to certify and confine such "mental cases" as lunatics: impolitic, as the action would be resented bitterly by the patient and his friends upon his speedy recovery, and further, unless the medical adviser was protected by the written request and consent of near relatives, an action for damages might result.

In actual practice, however, delirious patients of slender

[1] Scott *v.* Wakem [1862], 3 F. & F. 328. Symm *v.* Fraser [1863], 3 F. & F. 859.

means are detained, with the aid of a relieving officer and a local justice, often forcibly, in a parochial infirmary.[1] Since delirium tremens sometimes develops into *mania a potu* needing asylum treatment, it would be wise for medical men to label cases of delirium tremens exhibiting great violence during the mental deviation as *mania a potu*, even when such patients recover within the statutory fortnight during which temporary lunatics may be detained under the Poor Law.

Matrimonial Separation

The Habitual Drunkards Act, 1879, allowed a matrimonial separation order to be applied for by any wife whose husband is an habitual drunkard. This technical term is defined as "a person who, not being amenable to any jurisdiction in lunacy, is notwithstanding, by reason of habitual intemperate drinking of intoxicating liquor, at times dangerous to himself, or herself, or others, or is incapable of managing himself or herself, or his or her affairs".

By the Licensing Act, 1902, habitual drunkenness is made an additional ground of separation under the Summary Jurisdiction (Married Women's) Act, 1895, and a married man is now enabled to obtain an order of judicial separation on that account; the wife, with her consent, may be relegated to a reformatory. This last Act also allowed, as an alternative to compulsory detentions in a retreat, the compilation of a Black List of habitual offenders, an instrument which can only be of practical use in localities where every one knows every one.

The Introduction of New Terms

A philological item is of interest. Dipsomania was first used by Swaine Taylor in 1843; alcoholism by M.

[1] Lunacy Act, 1890, s. 20; s. 14, ss. 2; s. 14, ss. 3.

Huss in 1852. *Delirium tremens* was coined by T. Sutton in 1813. In 1748 Tobias Smollett describes whisky to the contemporary readers of "Roderick Random". Gin is introduced to the English vocabulary in 1714 as "the infamous liquor". The date of the Gin Act was 1736. Brandywine, however, is spoken of in 1622. In 1801 we read of those who are "driven to the slower suicide of habitual inebriety".

There is thus support for the statement that the hard drinking of old has been replaced to a large extent by the secret drinking of to-day; further, the words serve as landmarks left by the tidal waves of ardent spirits which flooded our countrymen during the eighteenth century, and whose disastrous effects prompted their grandchildren to researches and discoveries in mental pathology as influenced by the ingestion of the alcohols.

The Extent of the Need for Interference

An evil must be proved before it can be improved. Many maximising and minimising factors must be balanced or weighed before the truth as to the extent of the remedy required can be ascertained.

Habitual offenders against the practice of temperance graduate through many stages. At one end of the scale is the oft-repentant backslider whose will is weaker than his wish; at the other end is the criminal recidivist who is hopelessly callous as to his fate. In innumerable instances the "failing" is condoned by patient relations whose opinions are warped by family ties and by the selfish fear of a reflected social stigma: the father dreads a motherless home, the mother dreads relapsing into frigid spinsterhood and courts recurrent reconciliations with her drunken spouse. Similarly, very many cases are hidden from the public view in asylums, in retreats and in philanthropic

homes; among the well-to-do the scandal is kept within doors. Inebriates may retain a highly technical ability and only become obnoxious when away from their life-work. The company of some excessive "drinkers" is not objectionable, though it is often more genial than congenial. To the penologist is left the problem of dealing with those who periodically break out into crises of dipsomania, and those who form a homeless and vicious residuum, whose inebriety is but an indication of general mental and physical debauchery, and who have sunk to the bottom because they are dregs.

The legal attitude towards interference with habitual inebriates has been evolving from a policy of summary punishment to that of a sympathetic after-care: in sifting out individual cases the same successive methods may be followed to-day in police practice.

In 1606 summary conviction by fine or to the stocks was the penalty for sporadic outbursts. Subsequently a brief imprisonment was used as an alternative; later a longer detention was found to give a better control—it is said that many an inebriate was saved from himself by the confinement of penal servitude inflicted so commonly in the olden days. Stocks were employed at Newbury in June, 1872.

In 1844 the English Lunacy Commission declared: "Inebriety should be treated on the same lines as insanity". In 1855 the foundation of a State "asylum for inebriates" was discussed.

The Licensing Act, 1872, reviewed the legal position of the drunkard. In 1871 a Committee on Habitual Drunkards was appointed and it reported in 1873. The temporary Habitual Drunkards Act, 1879, was amended and made permanent as the Inebriates Act, 1888: under its provisions "the reception, control, care and curative treatment" of habitual drunkards was provided for in

licensed retreats, wherein they might commit themselves voluntarily for a period not exceeding two years, or under the Act of 1898 for the same period might be committed after conviction where they "admit or are found by the jury[1] to be habitual drunkards" subject to a mutual understanding existing between the magistrates who commit them and the managers of the reformatory which receives them.

Thus were initiated the several measures which have been devised to take the man from the "drink," for although drastic, this is in many cases the only effective way of taking the "drink" from the man.

In 1894 the Prevention of Cruelty to Children Act gave to a drunken offender the option of a prison or a retreat.

The Inebriates Act, 1898, was supplementary to the Act of 1888: compulsory commitment to reformatories was recognised in the case of those convicted on indictment, and of those four times in one year summarily convicted of drunkenness; such persons might be sent to a Certified Inebriate Reformatory after their ordinary sentence had expired (but not for a period longer than three years), if the managers of the institution were willing to receive them. The Recorder of Leeds (July, 1902) is reported to have decided in this connection: "It is possible for a man to be intoxicated with great frequency and regularity without being an habitual drunkard within the meaning of the Act, which was only directed against persons whose mental balance is in some degree affected by drink otherwise than immediately".

It was hoped by the reformers that, once admitted and detained, the inebriate would be convinced of the futility of nursing his insatiate craving for alcoholic mental intoxication amid the manifold good influences of happy and

[1] R. *v.* Meehan [1905], 2 Ir. R. 577 C.C.R.

novel circumstances which were intended to aid the fortification of his previously besieged brain; particularly should this be the case if, in addition to the exercise of his own will, skilled personal attention was concentrated upon any possibly hopeful index. As the public was led to realise the inebriate's condition of mind, they became familiar with the guardianship of the "confirmed" victim. Notwithstanding the ancient Common Law rights of liberty of the person, legal powers were granted over his body and, where such exists, over his estate. Concurrently with this idea of the ultimate control of vitiated personal habits, prolonged confinement for institutional treatment was sanctioned, so that now an inebriate may voluntarily surrender himself to a Licensed Inebriate Retreat, or he may be sent to a Certified Inebriate Reformatory compulsorily, or in the last resort he may be committed to a State Inebriate Reformatory (of which three have been opened under the Act of 1898). The denizens of this last reformatory are largely police court recidivists, criminal offenders: it would appear that if this class of reformatory were used for a sufficient number of cases, in a short time all habitual inebriates with criminal records and tendencies would be excluded from the community. During 1899 to 1905, there have been admitted to retreats, of which there are now a score: (*a*) under the Act, 701 men and 779 women; (*b*) privately, 917 men and 859 women;[1] there have been sent to Certified Inebriate Reformatories, of which there are now eleven: 265 men and 1,608 women.

Suggestions

The public have been steadily educated to the view of preventable disease having wrecked body and brain of the

[1] See the Annual Report of the Inspector of Certified Inebriate Reformatories and Retreats. London, 1906.

inebriate; the public must be made to appreciate more fully and to understand the conditions manifested by such social reprobates and their stigmatised progeny. Successive methods of treating the different classes must be applied to sort the mad from the bad, those who are sots because they are poor from those who are poor because they are sots, and those with an hereditary bias from those who threaten to be ruined by their own present and prevalent circumstances. Punishment and pity must be meted out to appropriate recipients. If new laws of private health are formulated, they must apply alike to the rich and to the poor, otherwise the friends of the latter will rightly resent the dictates of the official superior person.

1. The Lunacy Law might be extended so as to embrace the mentally defective. In desirable instances compulsory medical observation in a licensed retreat might be ordered temporarily by local magistrates in order that the report might guide them as to further action. Incipient insanity and acutely infectious disease may by Act of Parliament temporarily deprive the family of its bread-winner, and with inebriety should be considered as giving a claim for their public shelter and sustenance.

2. Prolonged seclusion, especially of the younger offenders, seems to be desirable in many cases; the present limit of three years' detention is too brief. The co-operation of the patient must be stimulated by conditional rewards; occupations under healthy and novel surroundings must be provided. Should a medical "cure" be certified by competent authorities as reliable, its application to those under observation in the retreat should be made compulsory. Upon "discharge" after-care should be exercised in view of a possible relapse among the former vicious associations.

3. Neglect of wife and family should be regarded, of

itself, as a criminal offence. Any charges incurred by a poor law or police court authority in dealing and caring for inebriate persons and their families should be treated by the guardians as a debt incurred by the offender. This is already the rule with those in reformatories.

4. Where a man is squandering his substance owing to his drunken career, a writ similar to that *de lunatico inquirendo* might be issued upon the application of a family conclave; the consequent proceedings might be less public than with lunacy. The safe-keeping and spending of his capital would thus be provided for; the consequent doles in many instances would be automatically, if temporarily, curative in effect.

5. Publicans who harbour inebriates should be noted at the annual licensing meeting. Those few who refuse to sell more than one "glass" to each customer should be encouraged. When a man leaves an inn in a drunken condition the proprietor should be subjected to public censure and to private penalty. The distribution of alcohol by licensed grocers and peripatetic retailers might well be restricted. Where it can be proved that a man receives "doctored devil in solution" when he requests to be served with a pure spirit, if any untoward conduct supervenes, the real culprit stands behind and not in front of the bar. Such victims are in the same category as those who were formerly "hocussed"

6. The already weakened ability of an inebriate to propagate should be annulled, and thus would be prevented in each case a chance to hand on the drink problem to the succeeding generation, who otherwise will have to deal with the tainted progeny—happily often short-lived, a race of "men with a hoe," stamped upon the foreheads with the mark of the beast.

VII

ALCOHOL AND PUBLIC HEALTH

BY

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Alcohol and the Forces of Human Evolution

THOUGH greatly modified by the influence of civilisation, it remains true that in every person's life, and in the community of which he forms a unit, the struggle for existence is always going on, the issue of the struggle being determined in the main by the fitness of the individual to his environment. The measure of the fitness of an individual for efficient survival is the ratio of his absolute fitness to the strain imposed by his environment. This measure is applicable to the community as well as to the individual; and the factors involved in the words "Public Health" are directed towards increasing individual fitness, and towards removing excess of strain on the individual caused by unfavourable environment.

Alcohol and National Efficiency

We are concerned in the following pages with the influence of the alcoholic habits of the community on

personal and national efficiency. The capacity of even moderate doses of alcoholic drinks to diminish individual efficiency for every kind of work has been clearly shown in other parts of this book; and in the following pages statistical evidence will be given enabling one to form some conception—however incomplete—of the amount of inefficiency resulting from disease and death due to alcoholic indulgence.

So far as environment is concerned, the evidence of strain and resultant inefficiency produced by our national drinking habits is equally strong. Even if it could be shown, first, that every member of the community has a margin of income over necessary and desirable expenditure, and, secondly, that alcoholic indulgence is harmless, the annual expenditure of many times as much on alcoholic drinks as on education, of more on alcoholic drinks than on our army and navy, of more than would suffice to enable everybody to live and work rent free, and of as much as on all rates and taxes put together,[1] would still be deplorable.

We know, however, that alcoholic indulgence is harmful, and we know that in some grades of society the struggle for a livelihood leaves even to the industrious little or no margin over absolute needs. Thus taking only the one necessity of housing, in London at the census of 1901, fifteen out of every one hundred families occupied only one room, and sixty-six out of every one hundred occupied fewer than five rooms each. It is noteworthy also, that of the one-roomed dwellings twenty-seven out of every hundred, and twenty-five out of every hundred of the two-roomed dwellings were overcrowded, in the sense that each room had more than two persons in it.

It has been estimated by Sir Thomas Whittaker that

[1] Whittaker, Sir Thomas P., M.P.: "The Economic Aspect of the Drink Problem," Lees and Raper Lecture, p. 12. London, 1902.

the average weekly consumption on alcoholic drinks by each wage-earning family is about 6s. 1½d. This estimate is based on the expenditure of 1900-1 and on the assumptions that three-fourths of the total population have working-class incomes, and that no imported wine is drunk by the working classes. Each family is assumed on the average to comprise 4¼ persons. This estimate implies that three-fourths of the people incur two-thirds of the expenditure on excisable drinks. Independent estimates made by Messrs. J. Rowntree and A. Sherwell,[1] and by Professor Leone Levi[2] give similar results. The former make the amount 6s. 10d., and the latter 6s. 2d. a week for each working-class family. As there has been some reduction in the consumption of alcohol during the last few years, we will assume that the average expenditure on alcoholic drinks is only five shillings for each working-man's family in the United Kingdom, although this is a considerable under-statement. What would their share of this amount do for the overcrowded tenement-dwellers of the Metropolis? In 1901 there were 124,773 such families crowded in tenements containing four or a smaller number of rooms, and the share of these families in the average family expenditure on drink, on the above basis, was £31,193 each week. If this expenditure had been diverted, it would have enabled the above number of families each to have an additional room and left a weekly margin of 3s. 6d. or 3s. to each family on an average for better and more abundant food, and for other comforts which these people at present lack.

It would be easy to multiply examples showing how wasteful is our present expenditure on alcoholic drinks, how much this money is needed in other directions, and

[1] Rowntree, J., and Sherwell, A.: "The Temperance Problem and Social Reform," p. 17.

[2] *Ibid.*, p. 15.

how greatly national efficiency and welfare would be enhanced were this wasteful and—as we shall find—pernicious expenditure diverted into useful channels.

Modern Hygienic Reform

There have been abundant opportunities for securing increased national efficiency during the last quarter of a century. Sanitary progress has ensured in very many particulars a more favourable environment. The average cost of living (including food, rent, clothing and fuel) has declined 14 per cent. between 1881-85 and 1900, while average wages have increased 20 per cent., and pauperism has declined 23 per cent. during the same period.

Against these and many other favourable influences must be set certain unfavourable influences. In 1901 over three persons lived in urban communities to every one in a rural community; in 1881 the proportion was only two to one; a change which involves a corresponding proportional increase of indoor, which are always less healthy than outdoor, occupations. The unfavourable effects of town life and indoor occupations have been to a large extent, and can be still further, obviated by practicable sanitary improvements.

It must be admitted that the increase of extravagance, both as regards smoking, food and drinks, clothing and amusements, and the gambling habits of a large proportion of the industrial and other classes have gone far towards minimising the advantages secured by cheaper living, higher wages, and improved sanitation, and there is little evidence that these evil habits are on the decline.

In taking a wide survey, however, we can congratulate ourselves that during the last twenty years the national death-rate has declined 13 per cent., and that this decline has not been confined to the early years of life, but has

been marked also during its working years. A much larger proportion of those born have survived to the working years of life than formerly, and the number of these workers who are cut off before their working capacity is exhausted has greatly declined. Against this, as will be seen later, is an increasing amount of sickness, if we are to trust the experience of friendly societies (see p. 145). Probably much of this increase is only apparent; but the fact that friendly societies need to give sickness-aid on a larger scale than formerly is for them an urgent reason for adopting temperance reform as a most important part of their policy.

In thus attempting to make up a national balance-sheet, facts as to past improvement should not cause us to refrain from taking stock of present evils, which hinder us from securing increased national efficiency. Of these, our national habits as to alcoholic drinks are the most potent. The figures already given indicate an enormous direct waste of money. The indirect waste of public money due to alcoholic indulgence is even greater. In various areas in which investigations have been carried out, it has been shown, as stated by the President of the Local Government Board,[1] that from 25 to 51 per cent. of total poverty is due to intemperance. As poverty is one of the main causes of premature sickness and death; as it is especially in the crowded tenements of the poor that pulmonary consumption—the chief cause of premature adult mortality—is spread, we have opened up by the abolition of alcoholic drinking the possibility of an immense reduction in human misery and disease.

It would carry me too far afield to discuss the proportion of total insanity and of crime caused by alcoholic indulgence, but the figures are very high. I propose to

[1] Burns, John, M.P.: "Labour and Drink," p. 21. London, 1904.

deal in the following pages mainly with mortality statistics.

Death Returns as to Alcoholism

Our national death returns, although they very incompletely reveal the extent of the mischief wrought by alcoholic indulgence, give important indications of the injury thus effected to the public health. In properly estimating the value of certificates of death, it has to be borne in mind that each certificate is handed by the certifying medical practitioner to a near relative of the deceased, who takes it to the registrar of death. There is every inducement therefore to the practitioner not to hurt the feelings of the relative by entering the word "alcoholism" on the certificate. It has also to be borne in mind that the doctor, in a large number of cases, can only return the proximate cause of death, although he is confident that either the illness would not have occurred, or the attack would not have been fatal, had the patient previously been temperate. This is frequently the case in fatal pneumonia, enteric fever, and erysipelas, and in many other diseases. Added to this we have diseases such as gout, which occur chiefly among those regularly taking fermented drinks, diseases which favour the changes producing premature old age.

Bearing these facts in mind there are three sets of statistical returns from which indications of the evil done by alcoholism can be obtained. The first two are derived from the official national returns of mortality, and deal with special causes of death, in which the influence of alcoholism is plain, and with the mortality in special occupations; and the third is based on the experience of insurance and friendly societies.

Alcoholism and National Returns of Deaths

(a) *Special Causes of Death*

Alcoholism, Acute and Chronic, and Cirrhosis of the Liver. In 1904 the deaths of 1,396 men and of 962 women in England and Wales were registered as due to alcoholism, to which number 32 was added as the result of medical inquiry. In the following table the corresponding facts are stated as annual death-rates per million of population for successive groups of years. For convenience, the death-rates from cirrhosis of the liver are stated in the same table, this being the only registered cause of death which, besides alcoholism, can, without further inquiry, be said to be due to alcohol. In 1904 this disease caused 2,207 deaths of men and 1,764 deaths of women.

Table I—England and Wales. Annual Death-rate per Million Persons Living in Groups of Years

	Five Years.							Four Years.
Cause of Death.	1866-70.	1871-75.	1876-80.	1881-85.	1886-90.	1891-95.	1896-1900.	1901-1904.
Alcoholism .	35	38	42	48	56	68	86	82
Cirrhosis of liver . .	42	72	110	120	122	120	122	122

These death-rates represent only a fraction of the total death-rate caused by alcohol. The number of total deaths already given, 6,329 in 1904, out of 549,784 total deaths in England and Wales, is sufficiently serious. If we add together the very incomplete numbers of deaths officially registered as due to alcoholism and cirrhosis of liver in the twenty-four years 1881 to 1904, we find that it means a recognised sacrifice of 137,299 lives.

That our English mortality statistics of alcoholism

are very incomplete is brought out more clearly by the statistics concerning it for the two countries of Europe, Switzerland and Denmark, in which *le secret medical* is guaranteed, and the death certificate is not seen by the relatives.

In the fifteen great towns of Switzerland, the percentage of total deaths from all causes among men of twenty years of age and upwards ascribed to alcoholism, or having alcoholism as an auxiliary cause, was 10·4 in 1902, 10·6 in 1901, 10·0 in 1900, 10·4 in 1899, and 10·5 in 1898.[1] If women be included, the percentage becomes 6·1 to 6·7 for the years 1891 to 1902. If the deaths exclusively ascribed to alcoholism be taken (*i.e.*, due to delirium tremens or chronic alcoholism), the percentage of the total deaths among men due to this cause was 2·47 during 1891 to 1900. Compare this with the official record for England and Wales, in which, in the year 1904, 0·87 per cent. of the total deaths among men aged twenty years and upwards were officially ascribed to acute and chronic alcoholism.

In the towns of Denmark during the four years 1893 to 1895 and 1897, 9,098 deaths of men over twenty years of age occurred. Of this number 4·2 per cent. were returned as due to alcoholism, and a further 3·1 per cent. as due to chronic alcoholism complicated by some other cause. Among men aged thirty-five to fifty-five years, the total deaths under these two headings reached the enormous percentage of 20. Before attempting to deduce from the above figures an estimate of the number of deaths caused by alcoholism in England and Wales, it is desirable to know the relative consumption of alcoholic drinks in the compared countries. Hence the following information is interpolated at this point.

[1] Mahaim, E.: Proceedings of the International Congress of Hygiene and Demography, Brussels, 1899.

TABLE II—YEAR 1903.[1] CONSUMPTION PER HEAD OF POPULATION IN GALLONS (SPIRITS GIVEN AS PROOF SPIRIT)

	Spirits.	Beer.	Wine.[2]
United Kingdom	0·99	29·7	0·4
Australian Commonwealth	0·82	11·6	1·2
New Zealand	0·75	9·5	?
Canada	0·83	4·8	?
Natal	0·40	?	?
United States	1·22[3]	15·0[3]	0·4
Denmark	3·25[3]	20·8[3]	?
Hungary	1·98[3]	?	?
Belgium	1·19	47·7	1·0
Germany	1·76	25·6	1·3
Holland	1·72	?	0·4
Sweden	1·65	12·5	?
France	1·56	4·8	30·2
Russia	1·03[3]	?	?
Norway	1·03	3·9	?
Italy	0·28	?	24·2

Although minor differences in effect occur, alcoholic poisoning may be almost equally produced by any form of alcoholic drink when habitually taken, even in amounts not commonly regarded as excessive, though really so. Hence it is of great importance to ascertain the amount of alcohol drunk per inhabitant in each country. The approximate data for this are given by Dr. Jacques Bertillon, quoting from M. Sundbärg's investigations.[4]

[1] From *Memorandum and Statistical Tables on Alcoholic Beverages*, 1903 (345).

[2] In 1899 to 1903. [3] In 1902.

[4] Bertillon, Jacques: *L'Alcoholisme et les Moyens de le Combattre jugés par l'Expérience*, p. 3. Paris (Librairie Victor Lecoffre), 1904.

TABLE III—NUMBER OF LITRES[1] OF ABSOLUTE ALCOHOL PER INHABITANT ANNUALLY CONSUMED DURING 1891-95, WHETHER AS BEER, WINE OR SPIRIT

France	15·87	United Kingdom	8·17
Belgium	12·58	Austro-Hungary	7·99
Spain	12·05	Netherlands	6·30
Denmark	10·87	Russia	5·21 (approx.)
Switzerland	10·73	Sweden	4·43
Italy	10·30	Norway	2·66
Portugal	10·10	Finland	1·84
Germany	9·25		

In reading the above statements as to the average consumption per head of population, certain facts must be borne in mind. Under the age of twenty little alcohol is drunk. This means that in England and Wales the consumption is practically confined to 58 out of every 100 inhabitants. Furthermore, much less drinking occurs among women than among men, and more than half of the total adult population consists of women. Among men indulgence in alcoholic drinks is by no means general; and as a true average of annual consumption, the amounts in the above table multiplied by three would probably approach more closely to the average annual consumption of alcohol, among those taking any alcohol at all. Even then, we still lack the information which would be most valuable of all in a public health investigation. How were the deaths from various causes distributed among those habitually drinking no alcohol and those drinking varying quantities of alcohol? In the light of the physiological and pathological considerations advanced in other parts of this volume, it may be assumed that systematic indulgence in any quantity of alcohol, whether small or great, is productive of evil in proportion to the dose exhibited and the

[1] One litre equals about one-fifth (·22) of a gallon.

frequency of the dose. We may further assume, without any serious error, that the effect on the national mortality returns will be proportional to the consumption of alcohol as shown in Table III.

Returning then to the national figures for alcoholism, and confining ourselves to the population over twenty years of age, we have the following result:—

TABLE IV—PERCENTAGE OF TOTAL DEATHS AT AGES OVER TWENTY ASCRIBED DIRECTLY TO ALCOHOLISM

	Men.	Men and Women.
England and Wales (1904) . .	·87	·74
Switzerland (1891-1900) . .	2·47	—
Denmark (1893-1895, 1897) . .	4·20	—

In Denmark the consumption of alcohol per person was 33 per cent. and in Switzerland 31 per cent. higher than in the United Kingdom. If we allow for this difference, and assume that the remaining difference between the English statistics on the one hand and the Danish and Swiss on the other hand is due to incomplete certification of deaths in the former, then on the Danish basis the deaths among men in England and Wales in 1904 directly due to alcoholism numbered 4,502, and on the Swiss basis numbered 2,724, instead of the 1,396 actually recorded. To this number must be added the 2,207 deaths of men registered in 1904 as due to cirrhosis of the liver.

So far it can be stated with a high degree of probability that over 6,000 deaths of men are annually caused in England and Wales by diseases induced by alcoholic indulgence. For every 100 such deaths among men, there are, according to the English experience, 81 among women. It is evident, therefore, that nearly 11,000 deaths were probably caused in England and Wales in

1904 by the two conditions which can with certainty be ascribed to alcohol. This means that about 5 per cent. of the total deaths in adults are caused by alcohol. This percentage probably greatly understates the real facts.

Alcohol and Phthisis.—It will shortly be seen that the death-rate from phthisis (pulmonary tuberculosis) is disproportionately high among those engaged in occupations in which there is an exceptionally great amount of alcoholic indulgence.

This relationship between alcohol and phthisis is dual. Alcoholic indulgence lowers resistance to infection by the tubercle bacillus (or by other disease-producing microbes); and those who are intemperate frequent public-houses in which, owing to indiscriminate expectoration, the risks of infection by the tubercle bacillus are greatly increased. The closeness of this dual relationship between alcoholism and phthisis is generally accepted. One aspect of the truth has been well stated by the late Dr. Brouardel, the Dean of the Medical Faculty of the University of Paris, in the following words:—

"Alcoholism is in effect the most powerful factor in the propagation of tuberculosis. The most vigorous man, who becomes alcoholic, is without resistance before it."[1]

In order to prevent any exaggerated statement of this relationship, it is well to bear in mind that although, until after 1899, there has been no steady decline in the expenditure on alcohol, and the amount now consumed is greater than it was in 1888, the death-rate from phthisis in England and in Scotland has steadily declined. Evidently, therefore, favourable influences are at work in regard to phthisis, more than counterbalancing the evil influence of alcoholic indulgence. The average consumption of alcohol in the United Kingdom, and the correspond-

[1] Brouardel, Dr.: *Transactions of the British Congress on Tuberculosis*, vol. i., p. 48. 1901.

ing death-rates from phthisis in each country of the United Kingdom are shown in Table V.

TABLE V—AVERAGE ANNUAL DRINK BILL[1] PER HEAD OF POPULATION IN THE UNITED KINGDOM AND PHTHISIS DEATH-RATE PER 1,000 OF POPULATION IN EACH DIVISION OF THE UNITED KINGDOM

Period.	Estimated Annual Expenditure on Alcoholic Drinks per Person.	Annual Death-rate from Pulmonary Phthisis.		
		England and Wales.	Scotland.	Ireland.
	£ s. d.			
1881-85	4 1 1	1·83	2·11	2·08
1886-90	3 19 6	1·64	1·88	2·13
1891-95	4 3 8	1·46	1·76	2·14
1896-1900	4 8 10	1·32	1·68	2·13
1901-1903	4 5 2	1·23	1·47	2·15

Deaths from Accident, Suicide and Homicide.—During 1904, of the total deaths, 2·86 per cent. were due to accident, and 0·6 per cent. to suicide. The total deaths caused by accident, suicide and homicide were 3·53 per cent. of the deaths from all causes. Between the ages of twenty and sixty-five, 8·3 per cent. of the total deaths among men, and 2·3 per cent. of the total deaths among women, were due to these three causes. A large though uncertain proportion of these was due to or favoured by alcoholism. In Switzerland, according to Dr. Mahaim, 6 to 7 per cent. of all accidents in both sexes, and at all ages, are due to alcohol; in Prussia the proportion is stated to be 4·7, and in Saxony 6·7 per cent. Even the accidental deaths of infants are many of them due to

[1] Based on a table on p. 8 of "Labour and Drink" by the Right Hon. John Burns, M.P.

alcoholism. In 1904 in England and Wales the deaths of 1,899 infants under one year of age were caused by suffocation, chiefly from "overlaying" in bed. Dr. Ogle, some years ago, showed that these deaths occur chiefly on Saturday nights, when there is the maximum amount of drunkenness of parents.

Denmark, with the highest consumption of alcohol, has the highest death-rate from suicide (Mahaim). In Switzerland from one-fourth to one-third of the suicides, in various provinces of France from one-fifth to one-third, and in Belgium one-third are referred to alcoholism.

Deaths from Syphilis.—The deaths from this cause, like those from alcohol, are for obvious reasons understated in the official returns. In 1904 the number of deaths ascribed to syphilis in England and Wales was 1,834. According to special investigations which have been made, it appears probable that nearly half of the infections with syphilis are received when under the influence of alcohol.

National Returns of Death

(*b*) *Occupational Mortality*

The decennial supplements to the reports of the Registrar-General of Births, Deaths and Marriages for England and Wales contain more complete and trustworthy information as to the influence of occupation on mortality than can be obtained elsewhere; and the information given below is entirely derived from the decennial supplement for 1881-90, by Dr. Tatham. Unfortunately the corresponding figures for 1891-1900 are not available at the time of writing (December, 1906).

In the following table a number of occupations selected from a much longer list are given, to illustrate the fact

that (*a*) the occupations of selling alcoholic drinks as well as (*b*) those in which notoriously alcoholic excess is common, must be classed among (*c*) those occupations in which for other reasons great danger to life is involved.

It should be explained that the "Comparative Mortality Figure" expresses, by an ingenious method first used by Dr. Ogle in the corresponding decennial supplement for 1871-80, the number of deaths among 61,215 persons, aged twenty-five to sixty-five, distributed in a given proportion at different ages. This number of men would give in England, as a whole, 1,000 annual deaths. In unhealthy occupations the number is exceeded, in healthy occupations it is not reached.

TABLE VI — COMPARATIVE MORTALITY FIGURES OF MALES FROM TWENTY-FIVE TO SIXTY-FIVE YEARS OF AGE ENGAGED IN DIFFERENT OCCUPATIONS, IN THE THREE YEARS 1890-92

Occupation.	Comparative Mortality Figure.	Occupation.	Comparative Mortality Figure.
Clergy, Minister	533	Draper	1,014
Gardener	553	(*b*) Butcher	1,096
Farmer	563	(*c*) Printer	1,096
Schoolmaster	604	(*c*) Plumber, painter	1,120
Grocer	664	(*b*) Carman, carrier	1,284
Carpenter	783	(*c*) Tool, scissors, etc., maker	1,412
Lawyer	821	(*a*) Brewer	1,427
Fisherman	845	(*a*) Innkeeper, inn-, hotel-servant	1,659
Shoemaker	920	(*c*) Potter, and earthenware manufacture	1,706
Doctor	966	(*c*) File-maker	1,810
All males	1,000		

Why should the business of inn-keeping be so much more dangerous to life than that for instance of a draper

or a shoemaker? In the latter there is probably as much dust and an equally vitiated atmosphere; and yet, as shown in Table VII, from the age of twenty-five onwards the death-rate is enormously excessive in those engaged in manufacturing and selling alcoholic drinks. In the case of innkeepers and inn-servants it may well be that the excessive mortality is in part due to infection with pulmonary consumption from the expectoration of frequenters of the public-house. In brewers this explanation cannot apply to any exceptional extent, and as will be seen from Table VIII, an excessive death-rate occurs from those diseases which are known to be caused, or greatly favoured, by alcoholic excess. That this is the chief explanation is indicated also by the fact that in the earlier years shown in Table VII the death-rates in each occupation do not differ greatly, the differences increasing with the lapse of years.

TABLE VII—MEAN ANNUAL DEATH-RATE OF MALES PER 1,000 LIVING IN THE THREE YEARS 1890-92 AT SUCCESSIVE PERIODS OF LIFE

Occupation.	Ages.						
	15-	20-	25-	35-	45-	55-	65 and upwards.
Innkeeper, Servant, etc. .	2·4	6·8	15·1	24·5	35·2	52·7	103·8
Brewer	2·7	5·6	10·8	19·0	30·8	54·4	129·1
Draper, Manchester Warehousemen . . .	2·4	6·2	8·5	13·9	20·7	37·6	89·0
Shoemaker	2·9	5·9	7·7	11·3	19·8	35·2	98·9

Table VIII, taken like the preceding tables from Dr. Tatham's report, is somewhat differently constructed from Table VI. The relative mortality from each of the enumerated diseases among a given number of men of

standard age distribution is stated in terms of that occurring among a corresponding number of occupied males of all classes, the latter being stated as 100.

TABLE VIII—RELATIVE MORTALITY AMONG MEN FROM CERTAIN CAUSES OF DEATH IN DIFFERENT OCCUPATIONS (OCCUPIED MALES UNDER EACH HEADING = 100)

	Alcoholism and Diseases of Liver.	Gout.	Diseases of Nervous System.	Suicide.	Phthisis.	Diseases of Urinary Organs.
Clergy, minister	50	150	84	50	36	95
Draper	117	—	124	107	141	88
Shoemaker	42	100	99	93	139	98
Occupied males	100	100	100	100	100	100
Innkeeper	733	600	195	229	140	220
Inn-servant	420	550	132	179	257	188
Brewer	250	500	152	121	148	190
Butcher	228	300	128	164	105	117
Costermonger	163	150	170	100	239	171
Coachman, cabman	153	300	100	143	124	132

The excess of mortality under these different headings is easily seen by a study of Table VIII. The death-rate of inn-servants from alcoholism and diseases of the liver is $4\frac{1}{3}$ times, from gout $5\frac{1}{2}$ times, from suicide $1\frac{4}{5}$ times, from phthisis $2\frac{3}{5}$ times, and from urinary diseases $1\frac{9}{10}$ times as high as that among the sum total of all occupied males.

If we compare brewers with clergymen, the contrast is equally striking. The death-rate among brewers from alcoholism and diseases of the liver is 5 times, from gout $3\frac{1}{3}$ times, from nervous diseases $1\frac{7}{8}$ times, from suicide $2\frac{1}{4}$ times, from phthisis $4\frac{1}{9}$ times, from urinary diseases twice as great as among clergymen.

Facts like the above, and the experience of insured lives, have led insurance societies to adopt rigid precautions in insuring the lives of those engaged in the drink traffic.

The following extract from the article by the late Dr. Symes Thompson [1] on insurance illustrates this point:—

"Ratings for dangerous occupations call for attention. Among these the most frequent are occupations connected with the drink trade. It is customary to add a 50 per cent. extra to such cases, even if classed as A1 by the medical examiner; but it is probably wiser to follow the usual rule of the more cautious offices and absolutely to decline to accept proposals in such cases."

Life Insurance Experience

The question of alcohol in relation to life insurance is dealt with in a separate section of this work (Chapter VIII), but the subject is logically so closely connected with that of mortality returns which we are now considering as to necessitate a short summary in this chapter of the most important facts.

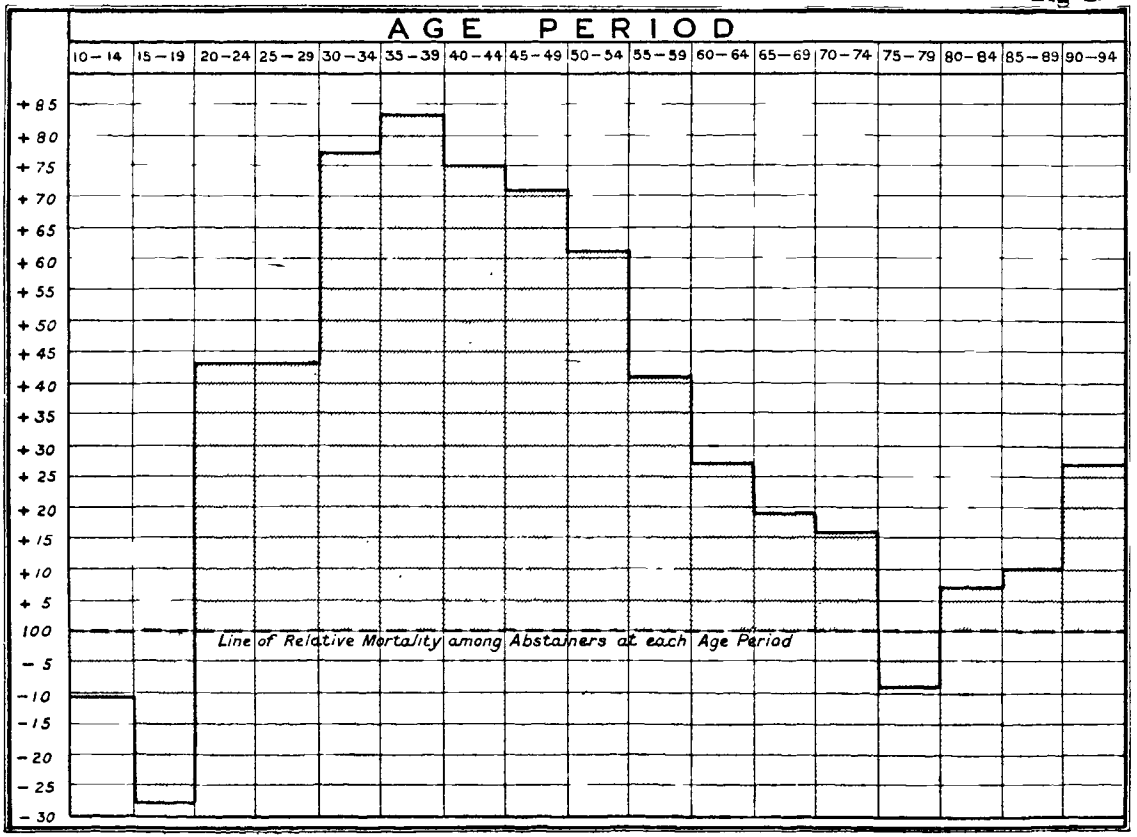
The experience of the United Kingdom Temperance and General Provident Institution during the last sixty years is so complete and accurate, and is on such a large scale, that I may take it as affording reliable material for my argument. This institution was founded in 1840 for total abstainers, non-abstainers being admitted from 1849 onwards. The records of the office have been kept in such a way that the two sections can be accurately compared. The same premiums are charged for both abstainers and non-abstainers, the former receiving any advantage arising from their superior vitality in the form of additional bonus. Persons are eligible for the abstainers' section who do not

[1] Thompson, Symes: in Prof. T. Clifford Allbutt's "System of Medicine," vol. i.

take alcohol as a beverage in any form; and the continued adherence of the assured to abstinence is checked by an annual declaration to that effect. If the abstainer ceases to abstain, he is transferred to the non-abstainers' section, and on the other hand assurers in the non-abstainers' section who become abstainers are generally eligible for transfer to the abstainers' section. Such transfers are not made if the assurers are known to be in bad health, or of intemperate habits. Furthermore an abstainer is allowed to take alcohol temporarily as a medicine. The abstainers' section throughout the experience has never "been favoured or nursed, with the view of securing more favourable mortality results, either by the admission of unexceptional lives only in the first instance, or by the removal or transfer of inferior or doubtful lives".[1] It is commonly said that transfers invalidate comparisons between abstainers and non-abstainers. This point was specially investigated in the present experience, the transferred lives being experimentally placed back in the group from which they were taken. The result was to show that no appreciable difference in death-rates was thus produced. Nor can any objection be urged on the ground that the two sections belong to different social strata, as the average amount insured in the two groups is about the same, namely, £300. The magnitude of the experience under consideration is shown by the fact that it is concerned with 31,776 whole-life policies of healthy male non-abstainers, passing through 466,942 years of life, of whom 8,947 died, and 29,094 whole-life policies of abstainers, passing through 398,010 years of life, of whom 5,124 died.

[1] Moore, R. M.: "On the Comparative Mortality among Assured Lives of Abstainers and Non-Abstainers from Alcoholic Beverages". *Journal of the Institute of Actuaries*, November, 1903. Also Whittaker, Sir Thomas P., M.P.: "Alcoholic Beverages and Longevity". *Contemporary Review*, March, 1904.

Fig 1.


AGE PERIOD
10–14
15–19
20–24
25–29
30–34
35–39
40–44
45–49
50–54
55–59
60–64
65–69
70–74
75–79
80–84
85–89
90–94
+ 85
+ 80
+ 75
+ 70
+ 65
+ 60
+ 55
+ 50
+ 45
+ 40
+ 35
+ 30
+ 25
+ 20
+ 15
+ 10
+ 5
100
– 5
– 10
– 15
– 20
– 25
– 30
Line of Relative Mortality among Abstainers at each Age Period

The chief teaching of the comparison between the two series is embodied in Fig. 1. In this diagram the abstainers' death-rate at each age-period, 20-24, 25-29 . . . 75-79, and at some earlier and later ages is given as 100, and the non-abstainers' experience is stated in proportion to this amount. The relative death-rates at ages below 20 and over 79 are based on small data. Below 20 there is an excess of mortality among abstainers, but the number of years of life of abstainers and non-abstainers at these ages is small and only 44 deaths occurred in the two departments at ages under 20 in the 61 years embraced in the experience. At ages 75-79 again the death-rate among non-abstainers is slightly lower than that of abstainers, but the numbers at ages 75 and upwards, like those below 20, are small, and the experience at these two ends of the diagram (Fig. 1) is not therefore very trustworthy. At other age-periods shown in Fig. 1 the number of years of life in the abstainers' section varies from 15,760 to 55,604 and in the non-abstainers' section from 9,516 to 67,423.

In Table IX the detailed facts on which Fig. 1 is based are set out. Two additional columns (3) and (4) are given in this table. In these columns the death-rate at each age-period is stated as a percentage of the death-rate in the wider experience of assured lives collected by the Institute of Actuaries. The average social position of the lives in the tables O^m is higher than that of those in the U. K. T. experience.

It will be seen that the mortality among the non-abstainers in the institution during the ages up to 34 was in excess of the wider ordinary experience (O^m) compiled by the Institute of Actuaries, but that for all higher ages, and throughout the more important part of the mortality table, it shows a remarkable agreement with the ordinary rate. The expected deaths from age 35 upwards were according to the ordinary tables 8,414, the actual number

of deaths 8,377, a difference of less than one half per cent. This is an important point in view of the fact that the average social position of the non-abstainers in the United

TABLE IX—MORTALITY EXPERIENCE OF THE UNITED KINGDOM TEMPERANCE AND GENERAL PROVIDENT INSTITUTION COMPARED WITH THAT OF ALL THE SOCIETIES EMBRACED IN THE INSTITUTE OF ACTUARIES' TABLES (O^m)

Ages.	No. of Years of Life of Healthy Males exposed to Risk, Whole Life Policies, 1841-1901.		Taking Ordinary O^m Rate of Mortality at each Age Period as 100, the Corresponding Rate was among		Taking Abstainers' Experience as 100, Non-Abstainers' Experience is
	Non-Abstainers.	Abstainers.	Non-Abstainers.	Abstainers.	
	(1)	(2)	(3)	(4)	(5)
10-14 . .	590	1,051	49·3	55·1	89
15-19 . .	2,104	4,491	127·0	177·3	72
20-24 . .	9,516	15,760	154·0	108·0	143
25-29 . .	27,099	32,740	111·0	77·8	143
30-34 . .	46,965	46,555	111·0	62·9	177
35-39 . .	61,106	54,097	101·0	55·2	183
40-44 . .	67,423	55,604	95·6	54·6	175
45-49 . .	65,931	51,377	100·0	58·7	171
50-54 . .	58,941	44,138	99·4	62·0	161
55-59 . .	47,879	34,974	101·0	71·5	141
60-64 . .	35,161	25,263	97·6	76·7	127
65-69 . .	23,219	16,479	103·0	86·9	119
70-74 . .	12,857	9,325	98·5	85·1	116
75-79 . .	5,780	4,351	97·6	107·0	91
80-84 . .	1,890	1,346	100·0	93·6	107
85-89 . .	358	322	94·2	85·8	110
90-94 . .	49	55	93·9	73·7	127
95-99 . .	1	5	207·0	—	—
All ages . .	466,943	398,010			

Kingdom Temperance experience is much lower than that of those insured in the societies whose experience is summarised in the O^m experience. It at least shows

that the non-abstainers were not less temperate, and were probably more temperate in respect of alcohol than those embraced in the O^m experience.

The mortality of abstainers for ages twenty to twenty-four is distinctly higher than the ordinary mortality (O^m), though much lower than that among non-abstainers. For ages twenty-five and onwards up to age seventy-four the results are greatly in favour of the abstainers. "This advantage increases up to the group of ages forty to forty-four, when it is at its maximum, being under 55 per cent. of the ordinary rate. After that age the rate very slowly approximates to the standard, being 71½ per cent. at ages fifty-six to fifty-nine, and 85 per cent. at the ages seventy to seventy-four. For the group seventy-five to seventy-nine the abstainers' rate is in excess of the ordinary, but for the remainder of life it is distinctly below. In general terms we may say that the feature of the abstainers' mortality is a great saving after early manhood throughout all the working years of life; which saving increases up to middle age, and gradually rises to the normal rate of healthy life as old age is reached at, say, ages seventy or seventy-five."

With regard to the excessive mortality at ages seventy-five to seventy-nine Mr. Moore shows that this occurs more or less in all classes of policies in the institution, and he regards it as "consistent with a general deferment of mortality consequent on a prolongation of the working years of life". In other words, under normal conditions —that is, if the ordinary mortality rate had prevailed throughout—they would have died earlier.

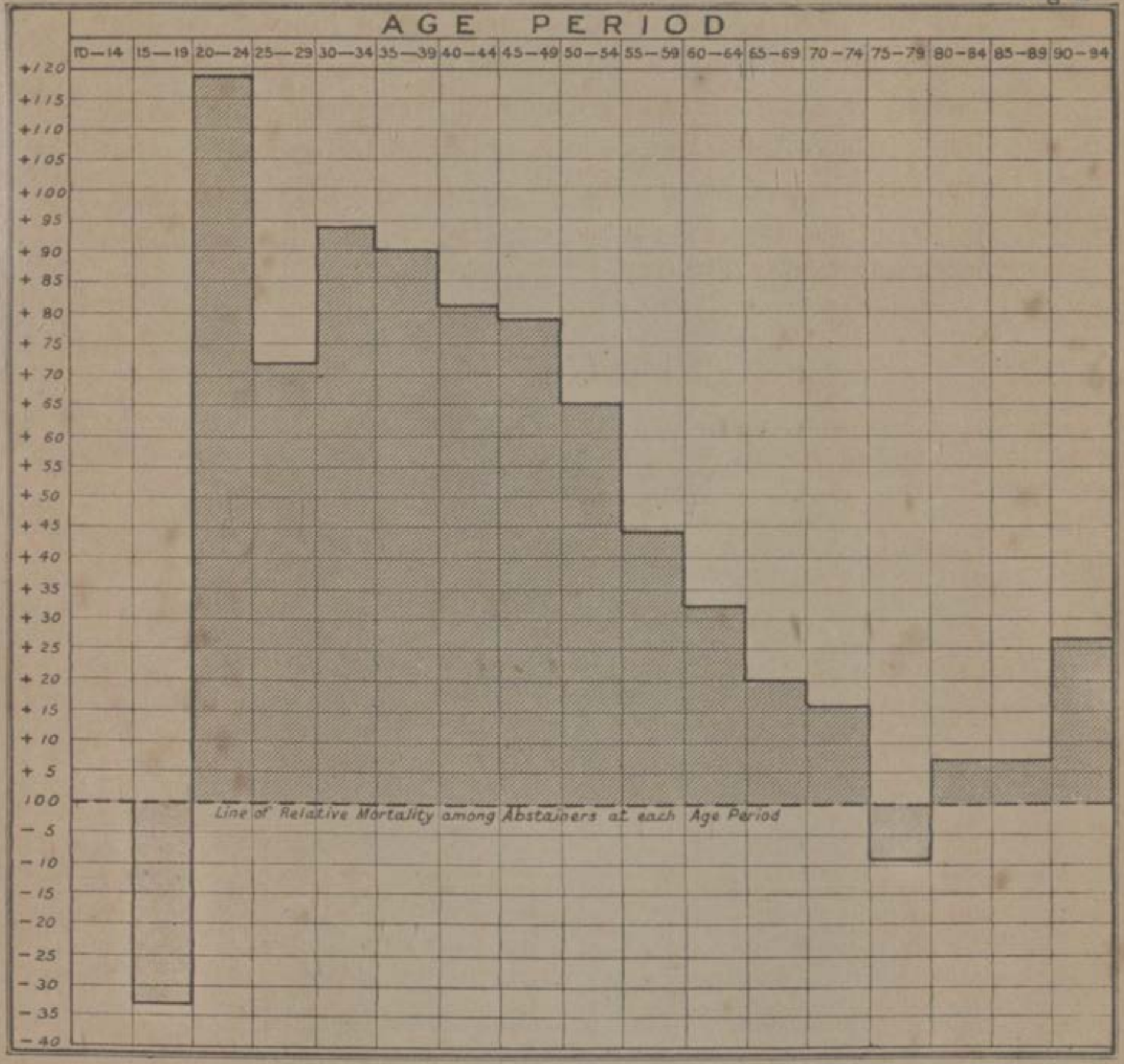
It may, however, be alleged, notwithstanding the assurances to the contrary of those responsible for the working of the institution, that there has been special selection of lives of abstainers. It is well known that during the first five years of insurance assured lives compare very favourably

with non-assured. The special influence of insurance must wear itself down as time passes, and though even at the end of five years the assured may be "selected" as contrasted with non-assured, it cannot seriously be contended that any special selection holds good for abstainers when compared with non-abstainers in the institution. Mr. Moore has, therefore, prepared the following table setting out the relative experience of abstainers and non-abstainers after excluding the first five years of insured life. In this table the results obtained by excluding the first five years of assurance are compared with corresponding results in the wider experience of the ordinary mortality tables ($O^{m(5)}$).

TABLE X

Ages.	Taking Ordinary Mortality ($O^{m(5)}$) as 100, the corresponding Rate of Mortality at each Age-Period for Males assured over 5 years was among		Taking Abstainers' Experience as 100, Non-Abstainers' Experience is
	Abstainers.	Non-Abstainers.	
15-19	100·5	68·2	67
20-24	68·9	150·5	21
25-29	76·7	131·9	172
30-34	59·0	114·0	194
35-39	54·1	102·6	190
40-44	55·0	98·7	181
45-49	59·4	106·2	179
50-54	61·5	101·3	165
55-59	70·8	102·1	144
60-64	76·2	100·2	132
65-69	86·7	103·9	120
70-74	85·9	99·5	116
75-79	107·0	97·7	91
80-84	94·4	100·6	107
85-89	85·4	91·3	107
90-94	73·2	93·8	127

Fig 2.


AGE PERIOD
10—14
15—19
20—24
25—29
30—34
35—39
40—44
45—49
50—54
55—59
60—64
65—69
70—74
75—79
80—84
85—89
90—94
+120
+115
+110
+105
+100
+95
+90
+85
+80
+75
+70
+65
+60
+55
+50
+45
+40
+35
+30
+25
+20
+15
+10
+5
100
−5
−10
−15
−20
−25
−30
−35
−40
Line of Relative Mortality among Abstainers at each Age Period

In Fig. 2 the relative facts for abstainers and non-abstainers, after excluding the selective influence of the first five years of insured life, are set out.

Here again the abstainers show as marked a superiority over the non-abstainers as in the complete experience. We have already seen that the two sets of lives are rigidly treated on similar lines, and are of an equal social position. We must conclude then that the prospects of long life are much greater among the abstainers than among the non-abstainers. It may be urged that the comparison is not strictly between moderate drinkers and abstainers, but between the latter and an uncertain admixture of moderate drinkers and drunkards. Doubtless there is truth in this contention; but we must remember that insured persons are specially selected as to sobriety; and that as shown in the third and fourth columns of Table IX, the death-rate of the non-abstainers was at most ages as favourable as that of the wider experience of insurance societies collected by the Institute of Actuaries, representing on the average a higher social stratum. There can be no doubt that in the main the results set forth shew that what must have been in the majority of instances fairly moderate consumption of alcohol produces a greater mortality than that shown by total abstainers whose circumstances are otherwise closely similar.

The Experience of Friendly Societies

The experience of sickness and mortality among the members of different friendly societies has great social importance, though in interpreting the statistics of sickness certain considerations have to be borne in mind.

The following table summarises the experience of the friendly societies of this country, whose experience has

been tabulated,[1] the experiences being stated in chronological order.

The experience both of sickness and mortality is stated for each age-period in proportion to that of the Rechabites. Dealing first with the death-rates, it will be noted that at most ages Oddfellows had a more favourable death-rate in 1866-70 than either Foresters in 1871-75, or friendly societies generally in 1876-80. This increasing death-rate is contrary to the experience of the general population, and probably indicates increased laxity in admitting members. The fact that the death-rate among the Rechabites is so much lower in 1878-87 than that of friendly societies in 1876-80, except at the two extremes of ages, might be ascribed to the improvement of the death-rate of the general population, were it not for the fact that this view is negatived by the experience of the Oddfellows in 1893-97. The death-rate of the latter at most ages is higher than that of the Rechabites in 1878-87, although in the general population an opposite course of events occurred. It should be added that the exceptional mortality among the Rechabites aged seventy-five and upwards is based on a very small number of deaths, and that at ages twenty to twenty-nine must be due to exceptional circumstances, such as different age at entry, or different rules as to entry; for it is just as improbable that at these ages abstinence *per se* should cause a higher death-rate as it is that alcoholic indulgence at these ages

[1] The data for M.U., 1866-70, A.O.F., 1871-75, Friendly Societies, 1876-80, and M.U., 1893-1907, are taken from the valuable report by Mr. A. W. Watson on the "Sickness and Mortality Experience of the I.O.O.F., Manchester Unity, during the five years, 1893-97". The rates for Rechabites from which the proportional figures in Table XI are calculated were specially calculated from data given on pp. 22-23 of Mr. Neison's report on the experience for the ten years, 1878-87, of the Independent Order of Rechabites.

would be so common in the other societies as to affect the death-rate.

TABLE XI—RELATIVE AMOUNT OF SICKNESS AND RELATIVE NUMBER OF DEATHS IN THE EXPERIENCE OF EACH FRIENDLY SOCIETY AT EACH AGE-PERIOD, TWENTY TO TWENTY-FOUR, ETC., THAT OF THE RECHABITES AT THE SAME AGE-PERIOD BEING STATED AS 100

Age-Period.	Sickness.				Mortality.				
	M.U. Oddfellows, 1866-70.	A.O. Foresters, 1871-75.	Registered Friendly Societies, 1876-80.	Rechabites, 1878-87.	M.U. Oddfellows, 1893-97.	M.U. Oddfellows, 1866-70.	A.O. Foresters, 1871-75.	Registered Friendly Societies, 1876-80.	Rechabites, 1878-87.	M.U. Oddfellows, 1893-97.
20-24	73	79	82	100	87	105	122	95	100	37
25-29	83	86	88	100	97	78	71	46	100	108
30-34	87	91	97	100	100	136	149	129	100	91
35-39	88	95	103	100	105	186	206	186	100	133
40-44	84	97	98	100	105	173	176	159	100	131
45-49	92	96	106	100	111	134	156	139	100	110
50-54	113	115	121	100	140	162	174	161	100	144
55-59	137	144	150	100	180	137	164	153	100	133
60-64	103	100	113	100	138	113	121	124	100	113
65-69	124	137	150	100	181	113	126	124	100	117
70-74	93	93	112	100	134	101	103	104	100	104
75-79	86	91	105	100	129	61	88	75	100	74
80-84	87	87	88	100	136	42	56	56	100	62

Table XII brings out a complete view of the relative mortality experience at all ages among the Rechabites and other societies. The experience of the Rechabites

at each age-period has been applied to the lives at risk at the corresponding age-period, and the sum total of deaths for all ages thus calculated is stated in Col. 3 of Table XII, while the actual deaths are given in Col. 2 of the same table. In the plan employed the figures are completely comparable, all merely arithmetical causes of variation having been eliminated.

TABLE XII—NUMBER OF DEATHS IN THE ACTUAL EXPERIENCE OF EACH FRIENDLY SOCIETY AND THE NUMBER THAT WOULD HAVE OCCURRED HAD EACH SOCIETY EXPERIENCED THE SAME DEATH-RATE AS THE RECHABITES

Experience.	Years of Life Exposed to Risk of Sickness or Death at Ages 20-84. (1)	Number of Deaths.		Actual per Cent. of Calculated Deaths.
		In Actual Experience. (2)	Calculated on the Basis of the Experience of the Rechabites. (3)	
Oddfellows (M.U.), 1866-70 . .	1,309,230	16,615	12,213	136
Foresters (A.O.F), 1871-75 . .	1,291,823	15,708	10,248	154
Registered Friendly Societies, 1876-80	1,639,900	22,833	17,112	133
Rechabites, 1878-87	116,826	976	976	100
Oddfellows (M.U.), 1893-97 . .	2,891,605	38,089	34,929	109

Thus with an equal amount of exposure of lives to the chances of mortality, the three first societies named above would give from 33 to 54 per cent. more deaths than the Rechabites; and the Oddfellows in 1893-97 give 9 per cent. more deaths than the Rechabites, although this experience of the Oddfellows belongs to a period of much lower death-rate in the general population than 1878-87, when the experience of the Rechabites was tabulated.

Turning next to experience of sickness, and leaving the Rechabites out of count for the moment, Table XI shows a steady increase in the relative amount of sickness at each age-period, as we pass from the early experience of 1866-70, to the most recent experience of 1893-97. This association of increasing sickness and decreasing mortality is a remarkable phenomenon, which cannot be discussed here in full. In my opinion it is not due to a preponderant extent to the fact that a larger number of weakly persons survive than formerly. Most of the measures which have saved life have also been instrumental in preventing sickness. The list of wounded as well as the death-roll in the battle of life has become shorter. Probably members of friendly societies go on their club more readily, and remain there longer than in the past. The collection of population in large urban communities has tended to diminish the sense of personal responsibility, and has lessened the pressure of the opinion and the surveillance of neighbours and friends. It is possible also that the Employers' Liability Acts, by increasing for older men the difficulty of securing employment, may have helped in the same direction: and other influences may have been at work. Turning next to the experience of the Rechabites, we find a marked contrast to the other societies. There is the same evidence of lack of selection in the earlier ages as in the mortality experience of the Rechabites. After the age of thirty-five, however, the sickness at most ages is markedly less than in the other societies.

The total experience of sickness of the different societies is compared in Table XIII.

It will be seen that the Rechabites had 4 to 5 per cent. more sickness than the three earlier societies, and had 18 per cent. less sickness than the more recent experience of the Oddfellows. It is highly probable that, had

it not been for the special habits of the Rechabites, their experience of sickness in 1878-87 would have more closely approximated to that of the Oddfellows in 1893-97 than it actually does.

TABLE XIII—NUMBER OF WEEKS OF SICKNESS IN THE ACTUAL EXPERIENCE OF EACH FRIENDLY SOCIETY AND THE NUMBER THAT WOULD HAVE BEEN EXPERIENCED HAD EACH SOCIETY EXPERIENCED THE SAME SICKNESS-RATE AS THE RECHABITES [1]

Experience.	Weeks of Sickness.		
	In Actual Experience.	Calculated on the Basis of the Experience of the Rechabites.	Actual per Cent. of Calculated Sickness.
Oddfellows, 1866-70 .	1,967,015	2,070,489	95
Foresters, 1871-75 .	1,756,695	1,831,978	96
Registered Friendly Societies, 1876-80 .	3,118,603	3,246,437	96
Rechabites, 1878-87 .	168,804	168,804	100
Oddfellows, 1893-97 .	6,848,430	5,794,167	118

SUMMARY

A detailed summary of the facts given in the preceding pages is scarcely necessary. It has been clearly indicated that the mortality returns of which instances have been cited only state a portion of the truth. The evil really wrought by alcoholism is much greater than any official figures reveal. The figures adduced must be taken merely as indications, and it must be remembered that the real facts are much more serious.

In alcoholism, we have to deal with a chief cause of national inefficiency. This inefficiency is partly caused

[1] The years of life exposed to risk are given in Table XII.

by the sickness and mortality due to alcoholism, and the numerous diseases which it favours, or actually produces, including insanity, which is dealt with in another chapter. It is caused also by the numerous accidents, suicides and offences against person and property for which alcoholism is responsible. It is caused, possibly to an even greater extent than by the direct methods already indicated, by other less direct means.

Alcoholism is a chief cause, if not actually the chief cause of poverty; and to poverty and all that is usually (though not always and inevitably) involved in the word, we owe it that our national efficiency is not immensely greater than it is at present.

Poverty prevents commerce, and thus diminishes work, and the rewards of work for all classes. It also creates disease, and completes the vicious circle of which poverty and disease form the two halves. The prevention of disease necessitates the removal of poverty; and the striking figures adduced in the preceding pages indicate how far we might go in this preventive work, were we to succeed in changing the alcoholic habits of the community.

VIII

ALCOHOL AND LIFE ASSURANCE[1]

BY

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MEDICAL OFFICER TO THE SCEPTRE LIFE OFFICE

THE facts and figures of life assurance are stubborn and hard to gainsay, and telling a tale of their own are worthy of due consideration. In reviewing the question of the action of alcohol upon the value of "lives," three questions have to be asked and answered.

They are:—

(1) Does the excessive use of alcohol tend to shorten life? The answer to this, from the universal experience of offices, is that the excessive use of alcohol undoubtedly shortens life.

(2) Does alcohol taken in moderation affect the probability of a lengthy life?

The answer to this query is that an increasing number of statistics over an increasing number of years show that even a moderate amount of alcohol habitually taken tends to shorten life.

(3) Do total abstainers from alcohol show a distinctly greater longevity than any other class of the community?

[1] In compiling this article the author has to acknowledge his great indebtedness to the able help of Mr. William Bingham, J.P.

The answer to this question must now be in the affirmative.

It is hoped that the following facts and figures will go to prove the truth of the assertions which have been made as the answers to the above queries.

A Retrospect

In 1840 a young Quaker, Robert Warner, applied to a London office for an assurance on his life, and was given to understand that in consequence of his teetotalism he would have to pay an extra premium, as the managers of the office believed the lives of abstainers to be shorter than those of alcohol users. Mr. Warner, however, thought his chance of longevity to be superior rather than inferior because of his abstinence and so declined to accept the penalty imposed; but taking counsel with some other Friends succeeded later in the year in starting an office for abstainers only, which a few years after opened a section for non-abstainers and is to-day the well-known United Kingdom Temperance and General Provident Institution.

The Experience of Various Assurance Companies

It will be seen from the accompanying table giving the experience of the United Kingdom Temperance and General Provident Institution, based upon an analysis of forty years, that the percentage of actual deaths to expected deaths is in the temperance section 71·52 and in the general 94·00.

Notwithstanding the persistent superiority in mortality here displayed there were not wanting actuarial and other critics who contended that the particulars furnished were not as "minute and scientific" as could be desired, so in November, 1903, the actuary, Mr. R. M. Moore, prepared and read before the Institute of Actuaries a most exhaustive

and valuable paper,[1] giving a very complete review of the full mortality experience of the office, and in the discussion that followed Mr. H. W. Manly (ex-president of the Institute) stated "he wished to say that the Institution whose experience was before them had done a good and noble work in the cause of temperance. It was founded at a time when the teetotaler was considered to be a

MORTALITY EXPERIENCE UNDER ORDINARY WHOLE-LIFE POLICIES, 1866-1905

Years.	Temperance Section.		General Section.	
	Expected Claims.	Actual Claims.	Expected Claims.	Actual Claims.
	Policies.	Policies.	Policies.	Policies.
1866-70 (5 years)	549	411	1,008	944
1871-75 (5 years)	723	511	1,268	1,330
1876-80 (5 years)	933	651	1,485	1,480
1881-85 (5 years)	1,179	835	1,670	1,530
1886-90 (5 years)	1,472	1,015	1,846	1,750
1891-95 (5 years)	1,686	1,203	1,958	1,953
1896-00 (5 years)	1,900	1,402	2,058	1,863
1901-05 (5 years)	2,021	1,456	2,221	1,961
Total, 40 years	10,463	7,484	13,514	12,811

crank, but the directors persistently held on to their principles—which were now proved to be correct—that the abstainers as a class were better and lived longer than the non-abstainers; they had, on each occasion of their periodical investigations, compared the deaths in the two classes, and on each occasion a very great advantage in the ab-

[1] Moore, R. M.: "On the Comparative Mortality among Assured Lives of Abstainers and Non-Abstainers from Alcoholic Beverages". *Journal of the Institute of Actuaries*, November, 1903.

stainers' class was shown. In now publishing their complete experience they had broken down all possible opposition, and removed all doubts as to the value of their figures; and they had in that way done more service to the cause they had at heart than any amount of talking would do." A deliverance of such weight from so high an authority is a very complete vindication of the wisdom of those who in the teeth of adverse criticism and much opposition were willing, in 1840, to put their cherished idea to the crucial test "to win or lose it all".

The Sceptre Life Association was formed in 1864 for the purpose of operating primarily among members of religious bodies, as the founders of the association believed that in consequence of the more careful habits and quieter mode of life generally characteristic of this class it would be proved that a low rate of mortality prevailed among them; and the experience of the past forty-one years has abundantly justified that forecast.

A separate section was, at the starting of the office, formed for total abstainers, and it has always shown a much lower death-rate than the general section although that has always been remarkably low.

Below is an extract from the Annual Report for 1905:—

MORTALITY EXPERIENCE

The claims by death expected during the past year (calculated by the Institute of Actuaries' H^{m} Mortality Table), as compared with those which actually occurred, were as under:—

General Section.			Temperance Section.		
Expected Deaths.	Actual Deaths.	Percentage.	Expected Deaths.	Actual Deaths.	Percentage.
142	113	79·58	118	57	48·31

The foregoing figures emphasize very strongly the valuable sources from which the association derives its business, and, as showing that the favourable mortality is not confined to 1905, the following results for the past twenty-two years are given:—

Period.	General Section.			Temperance Section.		
	Expected Deaths.	Actual Deaths.	Percentage.	Expected Deaths.	Actual Deaths.	Percentage.
1884-88 (5 years)	466	368	79·00	195	110	56·41
1889-93 (5 years)	564	466	82·62	312	184	58·97
1894-98 (5 years)	628	498	79·30	419	228	54·42
1899-03 (5 years)	712	548	76·97	514	270	52·53
1904-05 (2 years)	287	233	81·18	232	115	49·57
Total, 22 years	2,657	2,113	79·53	1,672	907	54·25

From the above it is clear that while this office draws its non-abstaining policy holders from a section of the public who are "good lives" from an insurance point of view, the total abstainers show a much less heavy claim rate, and the factor of alcohol would seem to be the only one at work between them.

The British Empire Mutual, commenced in 1847, opened a separate department for abstainers in 1883, and the actuary has kindly supplied the following figures as their experience:—

1883-1904.

Claims expected by valuation mortality table, 595.
Actual claims in temperance section, 349.
Percentage of actual to expected claims, 58·7.

The Abstainers' and General Office, which started in 1883, gives the following twenty-one years' mortality experience among abstainers:—

Deaths expected, H^m table, 768.
Actual Deaths, 375.
Percentage, 48·8.

The Scottish Temperance Office, also founded in 1883, contributes the following:—

1883-1902.

Non-abstainers, expected deaths, 319; actual, 225.
Abstainers, expected deaths, 936; actual, 420.

It must, of course, be borne in mind that the last two offices being young (with a large proportion of their lives near to medical selection), their actual death-rate is somewhat lower than will probably be the case later on; but the figures of the Scottish Temperance illustrate the same difference between the mortality of the two classes, as shown by older companies.

The Scottish Imperial Office, which has not long had a separate section for abstainers, furnishes the appended figures:—

1896-1903.

General section, expected, 654; experienced, 575.
Temperance section, expected, 48; experienced, 19.

The Sun Life Office a few years ago issued a circular offering to insure abstainers of two years' standing and upwards at a slightly reduced premium. The *Financial Times* commenting on this says: "A battle has long raged round the figures of those offices which keep their men in separate sections, and always show a higher bonus to the longer-lived abstinent. Strenuous efforts have been made to minimise these important statistics, and it is likely enough that they do not mean quite all that has been claimed for them, but when we see a first-rate company like the 'SUN' offering a direct and immediate cash

bonus to abstainers, it looks very like as if the case had been proved."

The following offices, while not publishing their actual mortality figures, intimate that the death-rate prevailing among their abstainers is lower than among the non-abstainers, and they recognise the fact by an increased bonus to the former class:—

London, Edinburgh and Glasgow, Scottish Accident Life and Fidelity, Victoria, Yorkshire. The British Equitable has just opened an abstainers' department. The Manufacturers' Life of Canada recently reported a death loss of 62 per cent. of the expectancy in the general and only 43 per cent. in their temperance section for that year.

The following questions were sent out to several American insurance companies by a New York paper:—

"As a rule, other things being equal, do you consider the habitual user of intoxicating beverages as good an insurance risk as the total abstainer? If not, why not?"

Extracts from the replies are given below:—

"No. Drink diseases the system."

"No. Drink destructive to health."

"No. Less vitality and recuperative power."

"No. Use tends to shorten life."

"No. Drink shortens life."

"No. Drink cuts short life expectation."

"No. Drink dangerous to health and longevity."

"No. Predisposes to disease."

"No. Reduces expectations of life nearly two-thirds."

As indicating that the abstainer is no longer regarded as an inferior life, but the contrary, two large London offices, who do not profess to give any advantage to abstainers, recently allowed a gentleman in the West of England a reduction of 5 per cent. from his payments on two £5,000 policies, simply in recognition of his abstinence; and a solicitor in Hampshire obtained a material reduction

in his premium for a £1,000 policy with one of the oldest Scotch companies on the same grounds.

The Prudential Life Company has added the significant question to its proposal form: "If a total abstainer, how long have you been so?" This is distinctly gratifying, as by this means that office will be accumulating a body of evidence that will be most valuable, and that they will in all probability utilise it is to be inferred from the action they have taken in reference to the lives of persons engaged in the liquor traffic. About twenty-five years ago they were suffering from rather a heavy mortality in their Ordinary Branch, and after careful inquiry they concluded that the lives of publicans were decidedly below the average standard, and issued a circular dated 31st October, 1874, intimating "that henceforth a premium of 15s. per cent. will be charged in addition to the tabular premium on the lives of beershop keepers, licensed victuallers and their servants". A few years later it was found this was insufficient for the risk, and the extra was raised to 21s. per cent., and on 29th February, 1896, again raised to £2, and the manager in a letter says: "It was modified in consequence of a very unfavourable mortality which we had for some time experienced from this class of lives".

The accident insurance companies giving a reduction of premium to total abstainers varying from 5 per cent. to 10 per cent. include:—

The Accident, the Century, the Commercial Union, the General Accident Corporation, the Lancashire and Yorkshire, the London and Lancashire, the London, Edinburgh and Glasgow, the Northern, the Ocean, the Royal Exchange, the Scottish Accident, the Scottish Temperance, the Sun, the Yorkshire.

It may be of interest to note that the manager of one of the accident offices which has for more than twenty years given a reduction of 10 per cent. to abstainers, re-

cently intimated that at the time when the reduction was given it was thought the advantage to the office would accrue in the greater immunity from accidents enjoyed by that class, but that experience had shown it was rather in the more rapid recovery when stricken down by accident that the superiority was shown.

The foregoing particulars are by no means exhaustive, but they are sufficient to indicate a general tendency, and they point irresistibly to the conclusion enunciated many years ago by the late Dr. Collenette, of Guernsey, in reference to intoxicants: "They produce weakness not strength, sickness not health, death not life".

In examining for life assurance medical men have need to recognise more fully the widespread prevalence of the drug habit. Many indulgers in alcohol are also addicted to the use of other dangerous drugs.[1]

The bearing of this on the question of life assurance must not be overlooked.

[1] Crothers, T. D.: "The Recognition of Drug Addictions in Life Insurances". *The Quarterly Journal of Inebriety*, vol. xxviii., No. 1, p. 14, 1906.

IX

ALCOHOLISM IN RELATION TO WOMEN AND CHILDREN

BY

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ALCOHOLISM in relation to women and children cannot be described as an exhilarating or pleasant subject on which to write. I, however, venture to hope that this chapter will be read by those for whom it is intended, *viz.*, by the women of our land. It is useless to hide our heads like the ostrich and to deny the danger which we refuse to face. The peril is here, it is very close, it is very urgent, and it is useless to turn away and deny its existence; but, unless we know, we cannot appreciate; and unless we make the effort to understand, we shall certainly fail to find a remedy. It is to induce women to carefully consider and inquire into this subject themselves that the following words are written. It is proposed to view alcoholism in its relation to women under various aspects, chiefly those which relate to their duties to their infants, their children, their homes, their dependants, and themselves. We will consider first the influence of the mother on her unborn babe.

Ante-Natal Influences

No doubt the history of every individual has been pre-written for thousands of years, and any attempt to modify his constitution and characteristics must be begun long before he has any physical being. However, it is not in the power of the philanthropist or the legislator to go back beyond a certain term, and that term is practically set for us, not by the nine months of utero-gestation, but by the constitution of each individual's parents, especially his mother. The development and well-being of each individual depends very largely on his environment, but still more upon the condition, mental, moral and physical, of the parents to whom he is born. We have been accustomed to think that certain diseases, such as phthisis, were hereditary, and it is only lately that we have been awakened to the fact that children are born, not with a distinct heritage of consumption, but with a certain peculiarity of tissue rendering them more liable to invasion by the bacillus of tubercle, and we have learnt that to a great extent it lies in our power to shield the organism from such invasion and so to strengthen the tissues that they shall not be unduly liable to attack. Much the same argument applies to alcoholism. The child of the female drunkard is not born with a direct alcoholic tendency, but is probably born with ill-nourished tissues, and especially with a badly developed brain and nervous system, which render him more liable than a healthy individual to fall under the influence of drink. In addition to this, such a child is seldom properly nourished during infancy and childhood; his mother's condition prevents her affording him healthy milk, and later on from earning money necessary for his support, and from possessing those habits of thrift and order which help to maintain a healthy and happy home. In addition to all this, the

character and the example of an inebriate mother conduce most powerfully to the development of an alcoholic tendency in her offspring. In Dr. George Newman's recent valuable work,[1] we find that Dr. W. C. Sullivan prosecuted an inquiry into the degeneracy of the descendants of alcoholics from amongst the female prisoners in Liverpool. He made notes of 120 women to whom there were born 600 children; of these 600 more than 55 per cent. were either still-born or died before attaining their second year. He also observed that there was a progressive death-rate in the families of inebriate mothers, and that the number of still-births and deaths in infancy increased with the number of the family, the mother's alcoholism constantly tending to cause premature and still-birth or sickly offspring. He found that of the children who were born and survived the period of infancy some 12 to 15 per cent. were epileptic.

Dr. Claye Shaw[2] also holds that abortion and premature birth are much commoner in alcoholic than in healthy women. He thought that it was fair to conclude "that a warped or dwarfed intelligence would accompany defects of structure, and this should be looked for in the epilepsy, impulsiveness, criminal conduct, suicidal and homicidal acts which lead the victims of maternal excesses to Broadmoor, to county asylums and to prisons".

From the same authority we learn that at the Bicêtre Hospital 41 per cent. of idiot and imbecile children had drunken parents, and that the mother was much more frequently an inebriate than the father.

Dr. Wiglesworth's testimony is to the same effect. He found that at the Rainhill County Asylum one-sixth of all the cases of insanity had a history of alcoholic parentage.

It is well known to physiologists that the organs and

[1] Newman, George: "Infant Mortality". London, 1906.

[2] Shaw, T. Claye: "The Psychology of the Inebriate Mother". *The British Journal of Inebriety*, October, 1903.

functions of pregnant women are in a peculiar condition, not indeed pathological, but of an instability which readily becomes pathological. Medical opinion is at present uncertain as to the exact causation of pernicious vomiting, eclampsia, and degenerations of the glandular organs (especially the liver) during pregnancy, but they are entirely at one as to the existence of these conditions and of their fatal tendency. Further, medical opinion is unanimous that the health of the expectant mother and of her offspring depends in a large measure on her environment during pregnancy. There is no doubt that suitable diet together with fresh air, exercise short of fatigue, and proper clothing, are the text of the gospel of physiological righteousness which we have to preach to expectant mothers. Not one of these essentials of health is enjoyed by the alcoholic mother. There is no doubt that alcohol is a protoplasmic poison, and that it interferes seriously with the structure and functions of all the organs, and that its deleterious influence falls with the greatest weight on the most highly complex and elaborate structures, *viz.*, those of the nervous system. To all this may be added the general poverty and misery which surround such women. The child is in the majority of cases heavily handicapped from the beginning, and even if born alive is in a condition little fitted to survive the perils that surround infancy. From such mothers it is impossible that a vigorous, healthy and intelligent race can be bred.

Unfortunately, it is not only the poor and destitute women who suffer from alcoholism. In these days of hurry, excitement and over-fatigue many women in society, who are above the temptation of "misery drinking," have recourse to nips of strong drink to enable them to get through their daily round of so-called "pleasure". The result to the unborn child is the same, for its mother's organs and functions are as much injured by excess as are

those of poor women by a deficiency of food, while alcohol is a common factor. We hear much of the *Simple Life*, and of the desirability of the return of the educated and leisured classes to a plainer and more wholesome standard of living. There is no doubt that this is much to be desired in the interests of all concerned. It is manifestly the duty of doctors (both men and women), of ministers of religion, of nurses, and indeed of all who have the welfare of the nation at heart, that they should by every means in their power impress upon the women of our country, and especially on expectant mothers, the absolute necessity that exists for a radical reform in the matter of diet and of general regimen. Much has been said about the neurotic tendencies of the age, and the higher education has been blamed for the "nervousness," neurasthenia and hysteria which are so common. Probably the higher education has had but a very indirect influence in this matter. It is of course true that any exercise of mind or body carried to excess induces over-fatigue, and if persisted in may lead through disorder of function to injury of structure; but the prime cause of this injury will in the majority of cases be found in some form of over stimulation or in some form of sedative. It is probable that overtaxed people, whether men or women, resort too readily to alcohol, tea and coffee as stimulants, while the consequent nervousness, sleeplessness and headache are unwisely treated by the careless self-administration of the popular sedatives, sulphonal, veronal, trional, etc.

The Influence of Alcoholism on Infants and Children

It is a melancholy fact that the rate of mortality in children has by no means sunk in proportion to the diminished mortality at all ages. It still remains abnormally

high, especially in large towns where the artificial methods of life, the employment of mothers in factories and other occupations which lead to the premature weaning and neglect of young children, the difficulty of a pure and adequate milk supply, and the deterioration of the air, tend to increase the incidence of disease, and especially of diarrhœa and other dietetic illnesses. All the children in towns are more or less affected by these factors, but more especially the children of alcoholic mothers must suffer.

It has been found that alcohol is present in the milk of the mother when she has taken that article in excess; the child then absolutely receives alcohol as part of his diet, with the worst effect upon his organs, for alcohol has a greater effect upon cells in proportion to their immaturity. The milk of the alcoholic mother not only contains alcohol but it is otherwise unsuitable for the infant's nourishment. It does not contain the proper proportions of proteid, sugar, fat, etc., and it is therefore not suited for the building up of a healthy body.

Poverty is another potent factor in the malnutrition and general misery of the child. This is partly the result of economic laws beyond the woman's control, but also partly due to her want of ability to make the best of her circumstances. The whole question is complex; the woman drinks because she is miserable, and she is still more miserable on account of her intemperance. The alcoholic mother not only furnishes bad milk to her child if she suckles it, but she is more likely to bring it up by hand, and hand-fed babies are more liable to disease and death than those nursed at the breast. The milk available for the poor is in many instances of bad quality and it is also badly kept and badly prepared for use. The milk that is bought by the poor in pennyworths is seldom fresh and seldom pure; it has been kept in small, close shops, exposed to contamination of dust and flies; it is dipped

out with a by no means clean dipper into the jug which is probably contaminated from the souring of the last supply of milk. When it reaches the child's home it is badly kept, and still further advanced in decomposition before it is mixed and given to the infant. Then again, owing to ignorance and laziness on the part of the mother, it is too often given from a bottle provided with an india-rubber tube which cannot be adequately cleaned and which therefore swarms with micro-organisms. Is it any wonder that the unfortunate babes are the victims of gastro-intestinal catarrh, of inflammatory diarrhœa, and the so-called "cholera" of infants? Many babies unfortunately fare even worse, for their contaminated milk is mixed with various forms of farinaceous food, none of which can be digested by the child until the salivary glands begin to work at about six or seven months of age. These children then receive highly fermentable food mixed with the milk already commencing to sour; the wonder is, not that so many die but that any survive.

Apart from the question of food, the clothes of these miserable infants are generally insufficient to protect them from alternations of heat and cold, from damp and chill.

As though all this were not enough to secure the supply of sickly, ill-formed and neurotic children, it is found that alcoholic mothers, and indeed others who are not themselves alcoholic, frequently administer small quantities of spirits to infants and children. In the Museum of the Royal Free Hospital there is the liver of a little girl, aged five years. It is a typical gin-drinker's liver, shrunken and granulated. The poor little child had received brandy in quantities varying from a few drops to a teaspoonful a day during the whole of her short life! Many people are firmly convinced that spirits are the best, if not the only, cure for all sorts of indigestion and flatulence; they also know it as a ready means of quieting a

crying child, and consequently the administration of spirits to infants and children is only too common. In many instances the foundations of future inebriety are laid in this way. The child who has been accustomed from babyhood to stimulants is very likely to continue their use when he becomes master of his own actions.

Accidents to Children Due to Alcoholism

To alcoholism must be attributed many of the accidents which happen to children. Earliest in point of time, with the exception of accidents at the time of birth due to drunkenness on the part of the mother or her attendants, must be mentioned overlaying.

As a rule in towns the child shares its mother's bed, and partly owing to its own feeble vitality, and partly to her carelessness, in not a few cases it is suffocated in bed. Mothers of this class are always sufficiently tired by night, but when to natural fatigue is added the stupor induced by alcohol the child's chances are poor indeed.

In continental countries the use of the cradle is almost universal and the same practice prevails in rural England. The child in its cradle is relatively safe, not only from absolute overlaying but also from quasi-suffocation by deprivation of the free access of air; but in large towns, chiefly owing to overcrowding, there seems to be no room for the cradle, and the child lies between its father and mother with the melancholy result stated above. That this is really due to alcoholism is proved by the fact that the "accident" is out of all proportion more frequent on Saturday and on Sunday nights than on any other, money (and the consequent drunkenness) being plentiful immediately after pay day.

Children of alcoholic parents are very likely to receive a share of the blows and injuries common in such families;

they are also very liable to perish by fire owing to carelessness in the use of matches and the want of suitable fireguards and other protections. When a little older, the children of inebriate mothers are allowed to wander out into the street to encounter the dangers of passing vehicles, a danger greatly enhanced in the present day.

Alcoholic Environment as it Affects the Health and Nutrition of School Children

The children of alcoholic parents are usually found to be stunted in growth, deficient in weight, suffering markedly from anæmia, and in many instances infested by vermin. The father, if alcoholic, probably gives but a small portion of his wages to the mother, he neglects his home, and deprives the children of the protection and care they should enjoy from him. Should the mother also be alcoholic, and even in the case in which the father is sober, there is a lamentable waste on her part of the family resources; she lies late in bed, the children are neither washed nor dressed properly and the elder ones go breakfastless to school. No wonder that they are the pallid, listless little mortals that teachers are compelled to put to sleep for the first hours of the schoolday; the little ones have been kept up late overnight by the noise, light and disturbance round them, the elder ones having probably played in the street until a late hour, and in the morning they are heavy with sleep, unrefreshed by any apology for a morning bath, hungry and exhausted for want of food. And yet it is of this unpromising material that our teachers are expected to make the bones and sinews of the nation! Can we wonder that reformatories, idiot and imbecile asylums, lunatic asylums and prisons are full? Can we wonder that there is a difficulty in obtaining recruits of standard development for the army,

and that many of the great railway companies complain that they cannot secure strong and healthy railway servants? Can we wonder that much of our trade and prosperity is slipping from us and passing to other nations? Can we wonder that with such unstable brains and feeble bodies, Macaulay's old lament is true of us that

> As we wax hot in faction,
> In battle we wax cold:
> Wherefore men fight not as they fought
> In the brave days of old?

As the children grow older and their grasp on life is stronger, the excessive mortality of the first months and years is diminished. There has been no doubt a survival of the fittest, but the fittest are themselves but little fitted for the battle of life. The alcoholic environment is potent to blight the promise of childhood. It is from these children, as described in the last paragraph, that measles, whooping cough and other childish diseases claim the heaviest toll of victims. Without the preceding semi-starvation and generally depressed vitality, the fatality of these diseases would be inexplicable, for, generally speaking, the children of well-to-do parents pass through them unscathed. It is in the degenerate children that the immediate mortality is heaviest, and that the after-effects, such as middle ear disease and tuberculosis, are most frequent. The number of cases of skin disease, of eye and ear disease, and the general failure of development in height and weight revealed even by our present imperfect system of medical inspection of school children, ought to be sufficient to open our eyes to the necessity of reformation in the bringing up of children and of their adequate inspection and treatment during the years of school life. Of course the defects noted occur amongst *all* school children, but they are specially frequent among those

whose parents have been unable or unwilling to give them proper care.

Adolescence of Boys and Girls as Affected by Temperance or Intemperance

There can be few pleasanter sights than is afforded by the healthy young people of a vigorous and temperate nation. The tall, straight boys; the lithe and graceful girls; the bright eye, clear skin and general vigour of well-bred, well-grown young people is a sight for the gods. The mental and moral characteristics of such boys and girls are equally charming, the sweet records of healthy and innocent childhood blending with the yet sweeter promises of vigorous and holy manhood. Such things are possible, such young people have existed and do still exist, but they are not to be found amongst the boys and girls who are the offspring of intemperate mothers, and who have grown up in the miserable homes ruled by such women.

On the contrary, we too often see shambling, awkward boys with dull eyes, coarse features and loose lips; the hoydenish, brazen-faced girls, whose only idea of recreation is boisterous and disorderly play. These are the products, not of our civilisation but of the brutality induced in mind and body by over-indulgence in alcohol. In such young people all seems lost; intelligence, vigour, manly pride and an honest desire for work are conspicuous by their absence, and yet these degenerate young people are the fathers and mothers of the future. "The people is destroyed for lack of knowledge." And yet what is more difficult than to teach temperance to the young people to whom it is merely a by-word, nothing better than "a fad of the parson," and, as the Scotch would say, of "the unco' guid". One of the difficulties

that beset the teacher who would inculcate the principles and practice of temperance arises from the fact that in painting a convincing picture of the wrongs and evils of intemperance, he is demonstrating to the children the plague of their own homes. It is necessary, if possible, to maintain in children, love and reverence for their parents, and yet this seems well-nigh incompatible with the adequate presentment to them of the evils of alcohol. A partial solution of the difficulty may be found in substituting the gospel of "thou shalt" for the old law "thou shalt not"; we may succeed in displaying the advantages of temperance, soberness and chastity, and there is a hope that such teaching may be welcomed even by those who cannot or who will not accept the direct negative. Much, too, can be done by promoting the health and the comfort of young people; by the provision of wholesome meals, not necessarily to be given to them but to be procured on very moderate terms; by inciting in boys and girls a wholesome rivalry in cleanliness and propriety of clothing; by organising for them rational games to take the place of their hooligan play; by the provision of large and well-furnished gymnasia, baths, clubs and institutes. All this and much more may be done and must be done, for if it be a mere question of economy, the nation will spend less in saving the young from ruin than in costly, and frequently futile, attempts to redeem them after the mischief has been accomplished. We must not look to legislation to do all—no nation was ever made prosperous or righteous by Act of Parliament—but we do thankfully acknowledge the great help that moderate and thoughtful legislation can be, especially when enforced not only with judicial firmness but with Christian charity.

The prohibition of the sale of alcoholic beverages to children under fourteen,[1] and the insistence that stimulants

[1] The Intoxicating Liquors (Sale to Children), Act, 1901.

shall be entrusted to youthful messengers in sealed bottles only, has done much to help. The age limit might be raised with advantage to sixteen or seventeen years of age, and a still greater advantage would be found if the sale of liquor to be drunk off the premises were rigidly separated from the bar service and restaurant. The real safeguard, however, to the young, would be the gradual formation among them of a healthy and intelligent public opinion that would lead them to value temperance for its own sake (and that not only in the case of intoxicating liquors), and also for the fruits of increased mental and moral worth and physical well-being. And here we think that employers of labour, both large and small, might be invited to help, for if they were particular in giving employment to none but the sober and respectable, and if the trades unions made stringent regulations against the admission of drunken and undesirable fellow-labourers, the whole tone of the nation would be greatly raised during the lifetime of the present generation.

Difficulties and Temptations to Alcoholism, with Special Reference to Young Women

Possibly a few words may be said here with reference to the special difficulties and temptations of young girls and women.

Woman's character is, as a rule, more emotional and sympathetic than is that of man. She is more easily led by her affections; ruled, we are told, more by her heart than her head, therefore likely to feel more keenly the disappointments and sorrows of life. She develops younger than does her brother, and is generally credited with somewhat less stability, both physical and mental. It is certain that developmental changes are both more marked and occur sooner in the girl than in the boy,

and whereas his greatest temptations probably occur between eighteen and twenty-five, the incidence in the girl is decidedly earlier. It is generally alleged by the highly experienced teachers of physical exercises both in Sweden and in Denmark that the girl's capacity for, and interest in, gymnastics and education generally suffers a temporary eclipse from about fourteen to sixteen. This is very similar to the well-known periodic pauses in growth and development that occur in younger children. There is no doubt that at this period of her life the girl needs special help and protection from herself. Rapid physical development makes great demand on her constitution, while unrecognised, and to her inexplicable, feelings and desires need kindly regulation and sympathetic control. A safety-valve has to be provided, and much praiseworthy effort has been already directed to this end by the numerous girls' clubs, singing classes, etc., that have been started. Much has been done, but more remains to be accomplished, and beyond all things it is necessary that what is done shall be done by the large-hearted sympathy of other women, and not in any merely formal manner. It is probably not Utopian to desire that the young girls of the educated and leisured classes should help to show a practical love and sympathy towards their less fortunate sisters, and under the guidance of older and more experienced women there would be much to be gained and nothing to be lost by such endeavours.

Further provision ought to be made for the careful instruction of young married women in their duties both as housewives and as prospective mothers. With the beginning of married life comes much self-revelation, and the call for a higher unselfishness and to a different form of duty. Many of our young women, however, undertake this condition in the most absolutely unprepared manner, and their happiness and that of their husbands' and pro-

spective children may be wrecked before the danger is perceived. The young woman who has hitherto been temperate, or even an abstainer, begins to feel undue fatigue, and possibly vague sensations of illness; the older women about her are all too ready to advise her to take stimulants as they themselves have perhaps done under similar conditions. Temporary relief is of course obtained, and from that moment the downward course is but too easy. Kind and wise instruction, if possible personal, and if not, by means of short bright books and leaflets, should be given.

Another period of great temptation and difficulty to women comes later in life when the key-note is no longer evolution but involution; a time when the joys and the eagerness of life are on the wane, and when perhaps without the solace of husband and of children, the woman is left alone to fight for the rest of her existence in a world which has no longer the glamour and the magic imparted to it by youth. To all this psychic decadence may be added a failure of health and strength too ominous of a narrowed and it may be even a poverty-stricken autumn of life. Here again the temptation to relieve care and to revive the dying fires of life by the taking of alcohol is very great.

Employment of Women as a Factor of Alcoholism

There are some forms of employment which are entirely unsuited to women and which lead almost of necessity to intemperance and to other forms of immorality.

First with regard to their employment as barmaids. A most useful pamphlet has recently been published on this subject.[1] We find from it that it has been estimated

[1] "Women as Barmaids," published for the Joint Committee on the Employment of Barmaids, with preface by the Right Rev. the Lord Bishop of Southwark. London, 1905.

that 75 per cent. of barmaids are intemperate, and the chief causes assigned are the long hours and constant standing. Several cases are quoted in support of this. In one instance the bar was opened at 6 A.M. and the barmaid was at work up to midnight, having, however, two hours' rest in the day. Another woman was on duty until nearly 1 A.M., having to clean up after business hours; she also had a short rest in the day, but said she was too tired to undress at night, lying down in her clothes; and yet a third said she rose soon after 5 o'clock in the morning and went to bed after 1 A.M.

In the section dealing with the age of barmaids it is mentioned that about two-thirds of the total number are between the ages of fifteen and twenty-five, there is then a very remarkable diminution in their number, and a still greater drop at the age of thirty-five. It is said to be almost impossible for the ordinary barmaid to obtain work after the last-mentioned age. It is horrible to learn "that women tried by long hours and fatigue cannot compete successfully with young fresh girls in their teens". A selection from advertisements is made in this chapter, among which are the following: "Two stylish young ladies required for saloon bar"; "Barmaid wanted—must be attractive"; "Required at once attractive young lady as barmaid"; "Wanted for a high-class wine lounge a stylish young lady, aged about 24"; "Wanted a young lady to assist bar and play piano for a small free-and-easy, must be young and of nice appearance"; "Young lady wanted for a select wine room in the West End, gentlemen only, must be well educated and of good appearance, age not over 25". Photographs are also generally demanded before engagement, and it is all too evident that these unfortunate girls are not so much wanted for the ordinary work of serving the customers as for their powers of attraction and the gratification of the customers. It is no

wonder that approximately 75 per cent. of barmaids are intemperate.

In a report to the committee Miss Orme stated that, as a rule, barmaids are allowed a certain quantity of intoxicants daily; she also said that many of the employers she saw admitted that the barmaids drank to excess, and that they were constantly dismissed for intemperance. Apparently most employers dismiss the girls when they find them intemperate; such dismissal, however, seems to be quite useless when once the habit has been formed. The practice of "treating" barmaids by customers is general but not universal; the barmaids are afraid to refuse to drink what is offered for fear of giving offence to customers; the results to these unfortunate girls are what might be expected; in many cases violent death by accident occurs, as in the case of a girl returning home drunk who fell into the river and was drowned; another under similar circumstances strayed on to the railway line and was killed by a passing train; many commit suicide; many are decoyed away and outraged; a large number become habitual inebriates and sink to the very lowest depths, while a few are reclaimed with difficulty. The moral effects of the employment of women as barmaids are still more deplorable.

Although the number of barmaids in rescue and maternity homes and lock hospitals is not absolutely large, it is large when the number of barmaids is compared with those of domestic servants. Mrs. Bramwell Booth is of opinion that the number of immoral women in the West End of London who have been barmaids is one-quarter of the whole.

Other employments have also a considerable tendency to cause or to favour inebriety, especially occupations in which there is much physical fatigue, such as standing for long hours or monotonous, uninteresting work. Inebriety

is found to be particularly common amongst women employed in laundries and in factories. There is also a considerable temptation to women waitresses in restaurants, and in some private houses where there is but little supervision, and where carelessness prevails with reference to drink. The employment of married women in factories and laundries is even more to be deplored than that of single women, because in addition to the ordinary temptation and probably degeneracy of the woman herself there is to be added the disastrous effect both on unborn infants and on children.

Indirectly these sorts of employments for women encourage drinking among men, for anything which makes the home miserable and prevents the woman's discharge of her primary duties as wife and mother tends to increase what has been called "misery drinking" among the men.

Nor is it only the uneducated women who are liable to enter employments in which there is a special temptation to intemperance. There is no doubt a very great liability to this disaster in actresses, public singers, reciters and nurses. The life of the actress and public singer is usually one of great strain and stress; their life alternates between a few hours of excitement and exertion and a considerable period of idleness. No doubt much could be done to make the lives of actresses and singers healthier both to body and mind. There is nothing in acting or in singing which necessarily leads to intemperance, but not only have we to reckon with the so-called "artistic temperament," by which is generally meant a preponderance of the emotional faculties, and a certain want of self-discipline and self-control, but the circumstances of the life might well be made healthier. These women ought to be encouraged to take regular outdoor exercise, to eat plain and wholesome food, and to abandon the abuse of alcohol and other stimulants; their hours of rest should also be

regular and sufficient. No doubt in many instances a wholesome and satisfactory life *is* led, many actresses and singers being model housewives, mothers and members of society, but such a life is in opposition to the general current of the public opinion of their fellows, and what is thus exceptional ought to be made the general, if possible the universal, rule. Nurses also, and many other women in these hard-worked, strenuous days, have long hours and fatiguing employment, with too little opportunity of out-door exercise, of relaxation and of sleep; while the great majority of women working for their living suffer from insufficient or unsuitable food. It is a common complaint of nurses in hospitals that although the food is ample it is monotonous, badly cooked and badly served. The same must be true of the great army of women workers in our large cities, whose middle-day meal, at any rate, is, in the majority of cases, poor in nutritive value, unappetising, and taken uncomfortably. A great improvement has taken place of late years in the domestic management of the hospitals, and many matrons now are really the mothers of their large families, and are most anxious to promote the physical and moral well-being of their fellow-workers.

There is no doubt that in all large centres of industry there are thousands of women, who from over-fatigue, monotonous employment, inadequate food, and the incessant grind of inadequacy of means to end, are constantly more or less depressed and deprived of the joy of living. What more natural than that they should seek some relief, no matter how temporary, and we must concede that the relief afforded by alcohol is quick and great although evanescent and in the end deadly. Surely we can all feel with our over-worked sisters how great the temptation may be, and no care or thought on the part of the professional and leisured classes could be too great to devote to their relief and salvation.

The phrases "luxury drinking" and "misery drinking" have entered into our literature, and they are in fact sufficiently apt in representing what absolutely occurs, for on the one hand one sees the women of society and of leisure turning to alcohol to spur them on to further exertion in the pursuit of pleasure, and to enable them to fulfil what are supposed to be social duties, while on the other hand there is the whole mass of misery drinking which it has been the object of the preceding paragraphs to describe.

The idea of making a nation of total abstainers is certainly not feasible, even if it were really desirable; but if the nation is to survive, if the deplorable ante-natal and post-natal mortality of infants is to cease, if the children are to survive to a healthy and vigorous life, if we are to make the best of our great position and to live up to our imperial responsibilities, something must be done, and must be done at once, to save the women and the children of the land from intemperance and its effects. No doubt enormous economic questions are involved, nothing less than the unequal distribution of wealth and opportunity for work, the employment suitable for women, the whole subject of the duties of wives and mothers, and of the bringing up of children with their education in its highest sense, in fact the whole area of Christian and social ethics, and who is sufficient for these things? It is of course impossible for any individual, or even for any committee of individuals to grapple with so vast a subject; the only hope is for those who know something about it to write, to speak, and to exert all possible influence on its behalf, and to hope that gradually a healthy public opinion will be formed. History does not fail to give us reason for hope and cheer. The nation that succeeded in abolishing slavery, that so greatly mitigated the treatment of prisoners, need not quail before even the hydra-headed

difficulties of the temperance question. In any difficult problem it is well to simplify and to deal first with the easier factors. Many such attempts are being made at the present time with reference to our problem, and here and there public-spirited officials, whether civic or medical, are doing their best to solve that fragment of the vast problem which comes within their own sphere of duty; *e.g.*, Dr. John Sykes, Medical Officer of Health for St. Pancras, has recently initiated a scheme[1] for the instruction and assistance of expectant and suckling mothers. He advocates the teaching of hygiene to such women by doctors, midwives, maternity nurses, women inspectors and lady visitors. In his opinion the distribution of leaflets with instructions as to hand feeding of infants is beginning at the wrong end; he is anxious that this advice should be entirely separated from that on instruction in breast feeding; he would supply the former only to women who had been compelled, under the advice of a doctor, to renounce the better method. He quotes from the cards of advice issued by the St. Pancras Borough Council which have been distributed by doctors, clergy, nurses and visitors to the mothers of St. Pancras. Dr. Sykes mentions the fact that St. Pancras has been very fortunate in its two women inspectors, who have been most enthusiastic and successful in their work. The experience of these ladies is that working-class mothers were very anxious that their children should be born healthy and robust; that prematurity, still-birth, and the enormous mortality of young infants is due chiefly to want of knowledge; and that by means of proper advice and assistance the health of expectant and suckling mothers can be greatly improved, with a corresponding reduction both of mortality and of

[1] Sykes, J.: "The Teaching of Hygiene to Expectant and Suckling Mothers". Report of the Proceedings of the National Conference on Infantile Mortality. Westminster, 1906.

morbidity amongst the children. It would appear from Dr. Sykes' paper, to which we gladly refer our readers, that much good has been already accomplished in St. Pancras and in other boroughs of London by this or similar methods.

Among other recommendations made by Dr. Sykes there is one which commends itself specially to us, *viz.*, to induce employers to provide cradle rooms, and facilities in workshops, factories, etc., so that suckling mothers may bring their babies with them and feed them naturally. It is but a short time that would be required off duty once in the middle of the morning and once in the middle of the afternoon.

Great interest has also been aroused in Huddersfield by the public-spirited action of the Mayor, Mr. Benjamin Broadbent, who has been giving £1 to every baby surviving the first year of life in the township of Longwood.

Influence of Mothers and Mistresses

No paper on alcoholism in relation to women and children would be complete without a few words with reference to the duties of the mistresses of households and mothers of families in this matter.

Women have at present no voice in the legislation of the country, no direct influence on Borough and County Councils, but their hand is on the lever which works all these things, and by their influence on their husbands, sons, daughters and servants, they are in the last resort in a most responsible position with regard to this question.

Every mother is responsible for the pre-natal condition of her child, for its suckling, feeding and general education; but during the years of childhood and youth her influence reigns supreme, therefore it depends on the mothers of the nation what the future men and women

of that nation shall be. If she is wise she will do her best to secure that from its earliest days her child shall possess and cultivate that inestimable quality of self-control, the divine gift of the power to say "No". It is related that when some one praised Charilaus, King of Sparta, for his goodness, another replied, "How can he be good who is not an enemy even of the evil!" And so it is that none of us can attain to our full moral, mental and physical development unless we are sufficiently the enemy of the evil to be able to deny it in our own person. "As the twig is bent the tree is inclined," and it is during the impressionable years of childhood that the future men and women of England must be taught that self-control which is essential to their welfare and that of their country. The foolish habit of giving way to a child's desires, more particularly to its physical desires, is responsible for much of the misery and of the alcoholism of after life. The child who is constantly indulged in the matter of sweets and other such trifles whenever he asks for them, and who is taught that the merest passing desire will meet with full gratification, will develop into the man to whom the most passing desire will mean indulgence in alcohol, and in many physical gratifications that are entirely incompatible with his sound and healthy development. We do not want to go back to Puritan days in their extreme form, we do not want to become narrow, sour and uncharitable; we do want our people to understand the joy of life. We do not want them to take their pleasures as Froissart said they did, "*moultetristement*," but even this would be better than the utter self-abandonment, the folly, and worse, of such celebrations as have acquired the name of "maficking". It must have been a revelation to many to find that the orderly, decent and perhaps too phlegmatic English could give themselves up to such unrestrained orgies. It is a sure sign that all is not well with the

nation, and that the mothers of the land must revert to more strenuous measures and to a simpler manner of life for their children.

The same principle runs through everything; it is not only a matter of eating and drinking but of the general power of self-government. All reform must come from within, and the power to order one's life aright, to be law-loving and law-abiding as we have been in the past will make discipline from without, the correction of penitentiary and gaol, unnecessary in adult years.

With regard to the duties of a mistress or employer of labour, every effort should be made by the provision of adequate and pleasant food, by the suggestion of drinks that may take the place of alcohol, and by the insisting on the observation of proper hours of rest and exercise, to secure the physical well-being of those around. Nor must loving care and supervision stop with this, for it is as important to secure spiritual teaching, opportunities for worship, for education and for recreation to all workers. A woman should be the last person in the world to forget that there is a spiritual as well as a physical side to human nature, and that any one of these parts cannot be neglected without injury to the whole; and that whereas it is usually the part of the man to earn the money and to pay the rent, the distribution of the household income and the household work rests almost entirely in the hands of the housemother.

There is a growing disinclination among young women to enter domestic service, and the reason is not far to seek. They have been more or less educated, and have had a taste of other things than the too often monotonous drudgery of daily service. They contrast the comparative freedom of factory or shop life on the one hand with the quasi-servitude of domestic service. The fact of the evening hours being at their own disposal, and that the work

is definite, really finished when the door of the factory or shop closes, is naturally attractive, and there is no doubt that if we are to maintain a supply of domestic servants the conditions of their service must be altered. It is perhaps difficult for the mistress to realise how much her servants crave for a portion of time that shall be really their own. She perhaps is willing to work night and day in the nursery with her beloved children, or in the performance of the countless small duties which make up the life of a house-mother. She must, however, remember, that the nurse who shares her maternal duties does so unsustained by maternal love; that the servants who assist her in making the home bright and comfortable for the delectation of husband and children do so without the reward that accrues to her in their devotion and love. Some servants work from the very highest motives, but others look upon the arrangement as a contract; they give so much work, the employer gives so much money, food, etc. It is useless for the mistress to complain that this is a poor and mean conception of their duty; if they are to give something beyond the contract, so must she, and there is no doubt that the mistress who provides not only the necessary board and lodging and the covenanted wages, but who also shows a human regard for the bodies and souls of her servants will have an ample reward. In addition to the willing, cheerful service thus secured, the house-mother ought to remember that "no man liveth to himself, and no man dieth to himself," that she and her servants and children are all members of one body, and that whether she looks at it from the religious, from the patriotic, or from the merely economic standpoint, she is bound in duty and in honour to do all this. Doubtless if domestic servants had these advantages, that form of labour would again become popular. Many mistresses would be astonished to be told that the drinking which

they too often have to deplore in their kitchens and servants' halls is "misery drinking". They think that because there is sufficient food nothing more is needed, but the too long hours and the utter absence from life of all beauty and joy leads to discontent and to vague yearning for other things, which in young and frivolous servants expresses itself outwardly in inordinate vanity or love of sweethearting, which too often lead to convivial drinking, while the older servants more worn by the burden and heat of the day are apt to seek fictitious strength and cheer from stimulants.

Alcoholism in Relation to Prostitution and Disease in Women

There is no doubt that most of the women who compose that sad army of the *fallen* have reached this state either because they were intemperate, or have become intemperate from the exigencies of their miserable life. Many girls owe their first fall from virtue to the casual glass of fiery, unsound wine or spirit given to them as a treat on some bank holiday or other convivial occasion. As detailed in another part of this paper such employment as that of a barmaid leads naturally either from intemperance to immorality, or the girl is first seduced and subsequently becomes a drunkard. The same thing happens in all ranks of life, although of course not so frequently in those positions and employments which are less beset by temptation. It is well known to doctors and to philanthropists that this combination of evil is particularly deplorable, that the woman's health is sure to suffer, and that it too often leads to a miserable and early death. The diseases from which these unhappy girls suffer may be the direct outcome of their sin, and even of those who do not die many are incapacitated for the duties of a wife

and mother even should restored virtue make them otherwise eligible. Besides, there is no doubt that alcoholism, with or without prostitution, exposes its victims to the influences of cold, wet and fatigue, and that they are, as a class, particularly liable to pneumonia, bronchitis and affections of the digestive organs. There is indeed no part of the body which does not suffer from this combination of two forms of immorality, for in addition to the special and ordinary diseases above mentioned, the nervous system is most prone to suffer, and our lunatic asylums are more or less filled with inmates who but for their intemperance might have been healthy and useful members of society.

General Conclusions

The more one considers the baleful influence of alcohol in women in all her relations and on her children, innocent victims of the fault of others, the more one is driven to realise the potency and vitality of this national curse.

It is quite easy to go on happily, believing that intemperance is much on the decrease, comforting one's self with the advance in temperance that has undoubtedly been made, especially by the middle classes, and dismissing as nightmares and idle dreams the assertions made by clergy, police officers and philanthropists as to the plague which is destroying our nation. Personally, I must confess that I never realised the extent of the trouble until I began to study the question seriously, and this is what I would like every woman in England to do. I would like her to turn her attention away from her own happy home, from her temperate husband and stainless family, and to consider what this means in the homes of the poor. To consider the condition of the feeble, diseased infants, the mentally deficient and stunted school children, the weedy youth, who is fit for neither army, navy nor workshop,

the hoydenish, loud voiced, girl with her abnormal craving for excitement and for drink. Let her look at our crowded prisons, lunatic asylums and refuges of all sorts; let her think of the money, the work, and the gladness that is wasted; and beyond all let her think of those unhappy women who are to her unmentionable, and of whom the very thought seems to her to defile. Let every educated and happy woman see whether it is not her work, her personal work and her bounden duty, to join herself to the band of those who feel it is their life mission to seek and to save those who are lost. It is only thus, by a determined and united effort on the part of those who are safe themselves, that we can hope to save our sisters, and through them our society, our race and our nation.

X

THE CRIMINOLOGY OF ALCOHOLISM

BY

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The Association of Alcoholism and Crime

IN discussing the influence of alcoholism on crime, what we have first to do is to form a clear idea of the meaning which we attach to these terms when we bring them into connection with one another. This has already been done for us in the case of alcoholism: that term, as is implied by the special bio-social standpoint adopted in this work, is used here strictly to indicate the intoxication, acute or chronic, by alcohol; it is, therefore, not synonymous with intemperance, but has a different, and in some respects a narrower, sense, connoting disease rather than vice. This distinction is of obvious importance in relation to the question which concerns us in this chapter, for it involves a corresponding limitation of the scope of our inquiry, which will have to do solely with the criminal acts that are directly dependent on the intoxication, and will not consider those disorders of conduct which, though they may be indirectly connected with the vice of intemperance, are not the results of the diseased condition and have no specifically alcoholic character.

So much, then, for the sense in which we are to understand the term alcoholism. The definition of crime is a less simple matter, for, as the word expresses a purely legal and social conception, it does not admit of being translated into terms of pathology for correlation with alcoholism. For this difficulty we can, however, find a solution, which will be fairly satisfactory from a practical point of view, by resorting to the customary method of classifying criminality into three main categories according to the nature of characteristic impulse in each variety, that is to say into crimes of violence, of lust and of acquisitiveness.

As defined, then, in accordance with the foregoing considerations the aim of our inquiry will be to ascertain the part that belongs to alcoholic intoxication in the genesis of each of these forms of more serious delinquency. By putting together what we know from the direct study of the criminal and what we can infer from the statistics of alcoholism and of crime, we may arrive at results which, if they cannot pretend to absolute accuracy, will at all events give an approximately correct view of the importance of the alcoholic factor in crime under the conditions actually prevalent in this country.

The Impulses of Alcoholism

In considering the influence of alcoholism on conduct it is necessary at the outset to draw a sharp distinction between simple drunkenness and chronic intoxication. Drunkenness in a healthy individual, *i.e.*, in an individual of average nervous organisation and free from the disorders of chronic poisoning, gives rise to impulses of acquisitiveness and of lust, but rarely if ever generates impulses of violence. In chronic alcoholism, on the other hand, homicidal and suicidal impulses are extremely fre-

quent, and represent in fact the natural reaction of the diseased state on the emotional life. In this condition impulses of acquisitiveness also occur, and impulses of lust; but these latter, as we shall see later, are very frequently of a different type from the sexual impulses in simple drunkenness.

The crimes connected with chronic alcoholism may sometimes occur, especially in the later stages of the disease, without any immediately antecedent excess; but much more often they are committed in a state of actual drunkenness. This drunkenness, however, which supervenes on the chronic intoxication, differs very materially from ordinary drunkenness, not only, as was pointed out above, in the nature of its dominant impulses, but also in the character of the nervous disorder which it involves. In ordinary drunkenness, where all the levels of the central nervous system are affected in regular and fairly rapid succession, there is necessarily very little chance of the performance of acts of a complex kind, and therefore the range of criminal conduct in this condition is comparatively restricted. On the other hand, in the drunkenness of the chronic alcoholic, which is the most frequent and important form of what has been termed pathological drunkenness, the higher brain centres are affected more readily and more profoundly than the rest of the nervous system, with the result that the drinker, despite the derangement of his consciousness, is capable of apparently deliberate and purposeful acts. It is in this dream-state, which may last a considerable time, that the morbid impulses of the alcoholic are most often carried into effect.

Alcohol and Crimes of Violence

It is in this category of offences that the influence of alcoholism is most felt. Of course, owing to the fre-

quently complex character of such acts, it is operative in very different degrees in different cases. In some instances it is so far the predominant factor that we may attribute the crime solely to the intoxication; this is so, for example, when an habitual drunkard commits murder in the alcoholic dream-state or in conformity with the delusions of chronic alcoholic insanity. In other cases it plays a less prominent part, as when the morbid irritability of temper, which is the most constant emotional change produced by the chronic intoxication, causes an exaggerated reaction to provocations from without, so that the drinker wounds or slays for absurdly trivial motives. In such cases as the latter, where the environmental stimulus is a factor of some account, the importance of the alcoholic influence may be differently estimated by different observers, and it is therefore necessary to control this possible cause of fallacy by comparing such estimates with the evidence of general statistics. This is the plan which it is proposed to follow here.

Personal investigations directed to this matter in the English prisons indicated that about 60 per cent. of graver homicidal offences and about 82 per cent. of minor crimes of violence could be attributed mainly to the influence of alcoholism. In the graver cases this influence was almost always due to chronic intoxication, except in some instances where an initial abnormality of mind had created a special susceptibility to the action of alcohol. In the less serious cases, on the other hand, as many as 15 per cent. of the criminals acted under the influence of merely casual drunkenness. This difference between the two series of cases is doubtless to be accounted for on the theory that in some proportion of the trivial offences external influences played a relatively larger part, whereas the graver crimes were always the expression of a primary homicidal impulse such as chronic alcoholism can, but simple drunkenness

cannot, engender. This view is supported by the fact that suicidal impulses are much more often found in association with the graver homicidal acts.

Now, how far does this estimate agree with the statistical evidence? The best way in which we can answer this question is by comparing the regional incidence of homicidal crime and alcoholism: if the estimate which we have given is really representative of the average condition of things, we shall expect to find a fairly clear correspondence between the distribution of crimes of violence and the distribution of alcoholism, meaning by the latter term, as indicated above, the chronic intoxication and not casual drunkenness. Instituting such a comparison, in accordance with the method used in the criminal statistics, between the composite areas which represent the main varieties of industrial conditions in this country, we find, as is shown in the table[1] below, that the incidence of homicide and assaults increases progressively as we pass from the less to the more alcoholic areas:—

	Annual Average per 100,000 Inhabitants (1891-1900).		
Areas.	Homicides and Assaults.	Drunkenness.	Attempted Suicide.
Agricultural counties .	116·33	226·3	3·46
Mining districts . .	237·34	1091·2	2·43
Manufacturing towns .	265·73	479·8	6·42
Seaports . . .	409·73	990·6	10·56

As measured by the alcoholic mortality in the related occupational groups, and as indicated roughly here by the rate of attempted suicide, the agricultural countries and

[1] Adopted from the criminal statistics: vide "Alcoholism," by the writer, pp. 72, 73; London, 1906.

the mining districts are comparatively free from chronic alcoholism; in the manufacturing towns it is much more prevalent; and it reaches its height in the seaports. Thus its distribution corresponds fairly well on the whole with that of homicidal crime. The only exception is in the case of the mining districts, which, though they resemble the agricultural counties in their immunity from chronic alcoholism, show a much higher rate of crimes of violence. This is probably due in part to differences in the non-alcoholic causes of such offences, which will be likely to produce more effect in a denser population, but it is doubtless connected even more with the enormous prevalence of convivial drunkenness in the mining districts, for, as was pointed out above, simple drunkenness, though its influence in this way is slight as compared with that of the chronic intoxication, is still responsible for some proportion of crimes of violence. How small is that proportion, however, is evident from the higher criminality of the manufacturing and seaport towns despite their lower rates of drunkenness. So far, then, as this statistical evidence goes, it supports the view put forward above that the predominant cause of crimes of violence in this country is chronic alcoholism.

Alcohol and Crimes of Lust

From the point of view of alcoholic causation it is necessary to divide this group of offences into two classes, according to whether the objects of the sexual violence are adults or children. In both classes alcoholism is a factor of considerable importance, but there is a remarkable difference in the nature of its influence in the two cases. Sexual offences committed on the adult are very often due to casual intoxication; they are indeed the only form of serious delinquency that can be in any large degree set

down to the account of simple drunkenness. Violation of children, on the other hand, when due to intemperance, is more often connected with chronic alcoholism, and the perverted appetite of which it is the expression is in fact a relatively frequent trait of the moral and physical enfeeblement of the advanced intoxication. In a very large number of instances the drunkard's own children are the objects of his lust.

With regard to the relative importance of alcoholism as a cause of sexual crime in this country, our information is rather scanty. Judging from personal experience I should be disposed to attribute to its influence something less than half the crimes committed against children, and rather more than half the cases of rape on adults. It is difficult to test the question by appealing to the criminal statistics, because offences of this kind are, more than any other, influenced by local conditions: where these conditions supply a legal outlet to the sexual impulse, as for instance in large towns, then the effect of alcoholism in stimulating that impulse will not lead to an appreciable increase of sexual crime; while on the other hand, in rural districts any extension of drunkenness is very likely to bring in its train a corresponding increase of this class of offences. Lombroso[1] has shown this relation very clearly in the case of Italy; and it is traceable in this country, though somewhat indistinctly, in the general tendency of sexual crime to rise and fall with the state of trade and employment.

Even in regard of regional incidence also, despite the qualifying considerations referred to above, some evidence of alcoholic influence may be made out. Thus, if we take the same composite areas which we used in speaking of homicide, we find that they show the following ratios of

[1] Lombroso: "Il vino ed il delitto". *Archivio di psichiatria*, vol. i., p. 192. 1880.

sexual offences per 100,000 inhabitants: Agricultural districts, 4·96; mining districts, 5·56; manufacturing towns, 2·95; and seaports, 4·50. These figures may be reasonably interpreted to mean that outside the agricultural counties, where the thinness of population is the dominant factor, the incidence of sexual crime corresponds pretty well with that of drunkenness. On the other hand, if we consider only the offences against children (offences against the Criminal Law Amendment Act) we get a different result: Agricultural counties, 1·33; mining districts, 1·08; manufacturing towns, ·89; and seaports, 1·48. Here we note that the violation of children, which we have connected rather with chronic alcoholism, does in fact attain its greatest frequency in the seaports where alcoholism is most rife, and is very much less common in the mining districts where other forms of sexual crime are most prevalent. Without attributing too much value to these figures, we may at all events claim that they show that such statistical evidence as we have agrees with our estimate of the importance of alcoholism in this category of crime.

Alcohol and Crimes of Acquisitiveness

In contrast with the two great divisions of serious delinquency discussed above, in which the connection between the criminal act and its informing impulse is generally close and obvious, the offences that we have now to deal with are, for the most part, of a much more deliberate and complex character, and are influenced in a different manner and in a more extensive degree by many social and economic forces.

In the causation of these less impulsive forms of crime, we may naturally anticipate that the part of alcoholism will be relatively small; and in point of fact its contribu-

tion to the total volume of such offences is practically insignificant, and is moreover confined almost entirely to their most trivial varieties: thus it may occasionally lead to petty larceny, or even, though more rarely to minor malversations and breaches of trust, but in the skilled crimes of this category it is so far from being a causal element that it is positively incompatible with their successful pursuit. This independence of alcoholic influence is abundantly evident in the statistics of crimes of acquisitiveness: their seasonal incidence differs widely from that of crimes of impulse, and in their regional distribution and in their periodic variations they show no correspondence with alcoholism. Despite its purely negative import, this conclusion is worth recording here because it gives a very necessary warning of the futility of those estimates of the relation of alcoholism to crime which refer to criminality taken in its integrity.

General Conclusions

To close this brief survey of the relation of alcoholism to crime, it remains to sum up the chief results to which it has led us. Considering the several categories of serious delinquency, we have found that alcoholic intoxication is answerable for about 60 per cent. of indictable crimes of violence, and for a rather higher proportion of minor offences of the same class: that it is probably the cause of nearly half the crimes of lust; and that, on the other hand, it makes no appreciable contribution to crimes of acquisitiveness. And we have further seen that, while in one form of sexual crime—rape on adults—the alcoholic condition which leads to the act may be no more than simple drunkenness, all the other varieties of delinquency due to alcoholism depend almost entirely on the chronic intoxication.

Finally, we have to remark that, as our discussion has been concerned solely with the relation of alcoholism to crime in the individual drinker, we have had to pass over another connection of the two phenomena which, though less susceptible of exact investigation, has from the social point of view a very high degree of importance—namely, the influence of parental intoxication in the genesis of those conditions of arrested or perverted development which characterise the moral imbecile and the instinctive criminal. This matter belongs to the problem of heredo-alcoholism, which has been dealt with elsewhere in this work, and we have here merely to indicate that due account must be taken of it in any estimate of the part which is to be imputed to alcoholism in the causation of crime.

XI

ALCOHOLISM AND PAUPERISM

BY

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A CHAPTER on the relationship between alcoholism and pauperism may seem almost superfluous. The close connection between the two is everywhere quite freely admitted, though curiously enough accurate statistics are scanty. A special interest attaches, however, to this phase of the relationship of alcoholism, since it affords a direct measure of an important part of the cost to the community of alcoholic excess.

In the following chapter the subject can of course only be discussed in bare outline and it may be conveniently considered under the following headings :—

1. Facts relating to the connection between alcoholism and pauperism.

2. The relation of alcoholic excess to disease and through this to pauperism.

3. The two types of alcoholic excess and their bearing on pauperism.

4. Alcoholism and poverty viewed from the standpoint of cause and effect.

5. Suggestions of lines along which further investigations should be made.

6. Remedial measures.

1. Facts Relating to the Connection between Alcoholism and Pauperism

Of *accurate* investigation into the causes which lead to application for poor relief there has been very little. A great many expressions of opinion and of estimates of the part played by alcoholic excess have been published in various quarters, but their great divergence, even when the conditions would appear to be reasonably comparable,[1] show how very little value can be attached to them. An important attempt to trace the relationship was made by a Committee of the Lower House of Convocation of the province of Canterbury in 1869, but in this inquiry, too, the conclusions drawn are not based to any large extent on accurate investigation of individual cases.

The three following are the most helpful investigations which have been so far published:—[2]

(*a*) Those made by the Rt. Hon. Chas. Booth[3] and consisting of an analysis of the causes of pauperism in the Stepney, St. Pancras and Ashby-de-la-Zouch Unions, 1889.

(*b*) Those made by Alderman A. McDougall in his "Inquiry into the Causes of Pauperism in the Township of Manchester," 1883.

[1] Taylor, E. Claude: "The Pauper Inebriate: A Note on the Etiology of Poverty". *The British Journal of Inebriety*, vol. ii., No. 3. 1905.

[2] For a good summary of available data consult Rowntree, J., and Sherwell, A.: "The Temperance Problem and Social Reform," Appendix, p. 637. Ninth edition. London, 1900.

[3] Booth, the Rt. Hon. Chas.: "Pauperism and the Endowment of Old Age".

(*c*) Those made by the Massachusetts Bureau of Statistics of Labour, 1894-95.

In judging of the results obtained it is necessary to note the method of inquiry adopted, the results being very dependent on the method.

Mr. Chas. Booth's inquiry related to a total of 1,447 individuals. The facts were those elicited by the relieving officers in reply to their questions respecting the previous history of the applicants. As Mr. Booth himself says: "No elaborate research or analysis has been attempted. The stories have been taken as they were found; where drink appears to occupy the first place, it has its big 'D'; and where it is mentioned, but in a secondary way, it has its little 'd'; and if it is not mentioned at all, it is assumed (no doubt often erroneously) that as a cause of pauperism it has not been present".

As the result of this inquiry drink was found to occupy the first place in causation in approximately 25 per cent. of the total.

The inquiries of Alderman A. McDougall, though made of a comparatively small number of people, *viz.*, 254, are much the most accurate investigations on record. He himself interviewed each individual, and one cannot peruse his pamphlet without feeling that at any rate for the cases he investigated the results he arrived at are conclusive as regards the association between pauperism and drink. These 254 individuals represent 404 persons, a total made up as follows:—

129 persons in receipt of indoor relief and drawn from all classes.

232 persons in receipt of outdoor relief.

28 inmates of the female lock wards.

15 vagrants.

In just over one-half of these cases their pauperism was brought about by causes directly arising from drink.

ing habits. The tables are sufficiently important to reproduce in full.

A. Pauperism Brought About by Causes not Directly Arising from Drinking Habits

	Per cent.
a. Caused by old age or infirmity	14·86
b. Caused by disease (not brought on by misconduct) or by accidental injuries	15·62
c. Caused by the head of the family being unable to find employment though willing to work	2·78
d. Destitution of widow and children—husbands having been well conducted	15·30
e. Women reduced to pauperism by immoral conduct—not drunkards	·20

B. Pauperism Brought About by Causes Directly Arising from Drinking Habits

	Per cent.
a. Pauperism caused by drunkenness in men	24·32
b. Pauperism caused by drunkenness in women	4·40
c. Widows and children of drunkards	21·84
d. Widows of well-conducted husbands who have drunken sons, who could support them if steady	·68

Of the men who become chargeable through drunkenness (B*a*) it is noteworthy that four were skilled workmen to every three unskilled.

The investigations undertaken by the Massachusetts Bureau of Statistics of Labour were very extensive. The reference was to obtain such data "as will tend to show the relation of the liquor traffic to crime, pauperism and insanity in this commonwealth," and among other particulars the Bureau was directed to ascertain "the number of paupers whose present condition can be traced to the use or abuse of intoxicating liquors by themselves or by their parents, guardians or others". As a result it was found that 39·44 per cent. attributed their pauperism to

their own intemperance and another (approximately) 5 per cent. to that of their parents, one or both.

It is of course to be expected that figures, however accurately obtained, would differ considerably as the conditions of necessity vary in different districts, but were a careful inquiry to be instituted into the causes of pauperism throughout the country, it seems almost certain that drink would claim a proportion of one-third to one-half.

When we remember that the total cost of poor relief is in round figures £12,000,000 per annum for England and Wales we realise what an enormous sum the taxpayer has to find under this heading due directly to drunkenness.

2. The Relation of Alcoholic Excess to Disease and through this to Pauperism

Many are obliged to become applicants for poor relief who would not have to do so were it not for disease temporarily or permanently incapacitating them for work.

There are no exact statistics recorded of which I am aware showing in what percentage of cases disease which leads to pauperism has been caused by drink, and moreover causation is often so complicated that any such statistics would be very difficult to obtain and would vary very considerably with the individual obtaining them. Those diseases more commonly associated with alcoholic poisoning, *e.g.*, cirrhosis of the liver or peripheral neuritis are not as a matter of fact common diseases. The influence of alcohol is indeed shown much more in diseases not generally looked upon as being intimately connected with it. A very considerable experience of a poor law hospital has convinced me how very important a part alcohol plays in certain diseases more particularly responsible for bringing patients to the hospital. Thus in cases of "bron-

chitis," "cardiac failure," "gastritis," "pneumonia," "phthisis"—diseases responsible for some 30 per cent. of the male admissions into the medical wards of the hospital referred to, alcohol has over and over again been an important etiological factor.

Two forms of disease, *viz.*, insanity and phthisis, may be more particularly referred to: they are both of especial interest, alike from the point of view of alcoholism or pauperism. With regard to insanity,[1] estimates of the proportion due to drink naturally vary considerably, partly due, as mentioned above, to there sometimes being more than one factor, and partly due also to the different classes from which the statistics are drawn. One may, however, safely assert that from 20 to 25 per cent. of all cases of insanity under the poor law are directly due to intemperance. This, however, cannot be taken as representing the whole of the influence attributable to alcohol. There is, for instance, a close relationship between syphilis and drunkenness,[2] and in those cases of insanity due to syphilis —and there are many of them—it is impossible to dissociate drink as an important etiological factor.

Alcohol was at one time supposed to be antagonistic to the development of tuberculosis,[3] but this idea was a "theory" based on no careful examination of the subject. We are now daily becoming more convinced of how surely intemperance predisposes to the development of tubercle by making the tissues a more suitable soil in which the

[1] See "Annual Reports of the Commissioners in Lunacy"; also Jones, Robert, in "Report of Inter-Departmental Committee on Physical Deterioration," p. 393 *et seq.* London, 1904.

[2] Eccles, W. McAdam, in "Report of Inter-Departmental Committee on Physical Deterioration," p. 334. London, 1904.

[3] For full statement of relationship, see Kelynack, T. N.: "The Relation of Alcoholism to Tuberculosis". *Transactions of the British Congress on Tuberculosis*, vol. iii., p. 334. London, 1904.

bacilli may develop and grow. In the phthisical wards of a poor law hospital, as I know from experience, the majority of the male patients will be found to have been heavy drinkers. A careful inquiry into the alcoholic habits of sixty-two adult male patients admitted into a poor law sanatorium for consumptives (including a considerable number above the "pauper" class), 43·6 per cent. owned that they were heavy drinkers, 40·3 per cent. were classed as "moderate" drinkers, and 16·1 per cent. were teetotallers.

3. The Two Types of Alcoholic Excess and their Bearing on Pauperism

The relationship of alcoholic excess to modern social problems needs for its intelligent appreciation a consideration of its two main types. The subject is dealt with in a very interesting and stimulating manner by Dr. W. C. Sullivan,[1] and requires more attention than it has so far received. Briefly, while admitting that no hard and fast line can be drawn, he divides alcoholic excess into (1) Convivial and (2) Industrial. Under the former heading he includes all forms of "luxury drinking," that which belongs to relative well-being, temporary or permanent. Under the latter heading he includes all forms of "misery drinking," including "the drinking related to overwork, insufficient or unattractive food, overcrowding, bad hygienic conditions of all sorts".

Convivial drinking tends to be intermittent only, and while leading to drunkenness does not necessarily lead to chronic alcoholism. This is, as pointed out in the paper referred to, well illustrated in the prosperous mining

[1] Sullivan, W. C.: "A Statistical Note on the Social Causes of Alcoholism". *The Journal of Mental Science*, vol. l., No. 210, July, 1904. Also by same author, "Alcoholism: A Chapter in Social Pathology". London, 1906.

districts which are more drunken but less alcoholic than any other part of the country.

Industrial drinking is such as one sees so constantly in all our large cities, and is a direct product of the unnatural and entirely harmful conditions under which so many work and live. An appreciation of this broad difference in the two forms of alcoholic excess helps to explain some of the apparently discordant facts relative to the drink question, and has an important bearing on the question of remedial measures.

Convivial drinking has been and is gradually decreasing in all classes of society, and is amenable to educational and religious influences, and in itself, as Dr. Sullivan points out, does not bear a very serious relationship to modern social problems.

Industrial drinking, fostered by all the many depressing influences of city life, is the form that by predisposing to disease and by making the individual hopelessly inefficient in every way, leads directly to pauperism. If there is less drunkenness than there used to be, there is more drinking.

4. Alcoholism and Poverty Viewed from the Standpoint of Cause and Effect

It would not be possible in this short chapter to enter even briefly into the vexed question of the relation between poverty and drink as representing cause and effect.[1] They of course act and interact, but no helpful ideas as to the prevention of pauperism due to this cause can be possible unless careful consideration be given to the question, "Why do men drink?"

[1] See National Temperance League's "Tracts for the Times," especially Vandervelde, Emil: "Drink and Socialism". Consult also Burns, Rt. Hon. John, M.P.: "Labour and Drink," Fifth Lees and Raper Memorial Lecture. London, 1904.

In times of greater prosperity more money is invariably spent on drink; drunkenness, crime and insanity following in its wake. For this there is over and over again no excuse beyond that of the careless satisfaction of the man's appetite. Over and over again, on the other hand, how pertinent is the question Mr. Seebohm Rowntree[1] asks: "Housed for the most part in sordid streets, frequently under overcrowded and unhealthy conditions, compelled very often to earn their bread by monotonous and laborious work, and unable, partly through limited education and partly through overtime and other causes of physical exhaustion, to enjoy intellectual recreation, what wonder that many of these people fall a ready prey to the publican and the bookmaker?"

And when we have said all there is to be said, and in all truth there is plenty, of the connection between pauperism and alcoholism, it will not help the solution of the problem to shut our eyes to the fact that alcoholic excess can frequently not be looked upon as the sole factor.

Of those who indulge in alcohol to the same extent as the man who is driven to accept poor relief after all only a very small proportion are brought to destitution. Poor relief is sought only because the given individual has not other resources to fall back upon, such as are within the reach of his more fortunate neighbour. This consideration should make us careful of apportioning more especial blame, as we habitually do, to those who happen through drink to fall into destitution, and we may well give thought, as Mr. Chas. Booth[2] does, to the question "Were those upon whom the tower of Siloam fell guilty above all others?"

[1] Rowntree, Seebohm: "Poverty, a Study of Town Life". Second edition, p. 142 *et seq.* London, 1902.

[2] Booth, Rt. Hon. Chas.: "Life and Labour of the People of London". Final volume, p. 59 *et seq.* 1902.

5. Suggestions of Lines Along Which Further Investigations Should be Made

There are certain lines, among many others, along which further inquiries might with advantage be made.

(*a*) Investigations in various parts of the country, giving results for city, urban and rural populations, and for areas where special conditions exist, need to be made on the lines of Alderman Alexander McDougall. The statistics should be got out separately for the different classes of applicants, *e.g.*, the able bodied, the sick and the aged.

(*b*) From the medical point of view more accurate investigation is still required. The exact weight to be attached to the influence of alcohol in the production of disease, and the consequent poverty and pauperism to which it leads is still far from known.

(*c*) The question of "convivial" and "industrial" drinking needs careful thought and analysis. The validity of the distinction, the limits of its applicability, the bearing of it on social problems and its importance in relation to remedial measures are issues full of interest. Dr. Sullivan's method of using statistics of suicide as a touchstone for comparing the relative importance of the distinction is a good example of what useful work can be done in this direction.

6. Remedial Measures

"The remedies[1] for preventing the pauperism caused by alcoholism are the same as those required in dealing with the drink problem generally.

Perhaps the most important point, and one, too, which is becoming increasingly accepted by temperance reformers

[1] See especially Rowntree, J., and Sherwell, A.: "The Temperance Problem and Social Reform". Ninth Edition. London, 1900.

is that the problem must be recognised, not as a separate one but as part of the whole social problem. This does not in the least imply that there is to be any slackening in our efforts to promote measures of direct temperance reform. It does imply, however, that we shall only be successful in our efforts as we acknowledge that alcoholic excess is often but an effect, the cause or causes of which we must tackle. Remedial measures can here only be considered in bare outline. They should proceed on the following lines :—

a. Personal

The appeal to the individual must continue as heretofore, but the method of rhetoric and exhortation must be recognised as having strict limitations of usefulness; it has been too exclusively relied upon in the past.

b. Educational

Along these lines there is great hope. Important strides are being made daily in this direction. The scientific and medical aspects of the question are becoming more prominent and the increasing attention being paid to the alcohol question by the teachers in our elementary and other schools will certainly have a far-reaching effect. Bands of Hope, too, are being re-organised and will play a still more useful part than they have already done.

c. Legislative

Directly Bearing on the Drink Problem.—Probably the measures of most immediate necessity are those directed towards very greatly reducing the facilities for drinking coupled with more stringent supervision of what drink shops there are. This implies the necessity of a time-limit beyond which no compensation for non-renewal of a licence will be entertained. The more remote, be-

cause of the difficulties of carrying it into effect, but none the less urgent, requirement is that the sale of drink should cease to be carried on for private gain. Direct public gain would appear to be equally obnoxious and some form of disinterested management would seem to be the only safe course.

Indirectly Bearing on the Drink Problem.—This obviously includes legislation directed towards the improvement of the conditions produced by our industrial system under which so many thousands live—conditions as regards housing, conditions as regards labour.

We should keep constantly before our minds the environment necessary for the leading of wholesome, healthful lives, and while remedial measures are being taken with regard to our large existing cities and towns every effort should be made towards starting communities *de novo* on the lines associated with such communities as Bourneville and the Garden City, and along other lines with the more avowed object of once again getting the people back to the health-giving land. All such developments will prove the most effectual foes against both alcoholism and pauperism.

XII

THE TEACHING OF TEMPERANCE

BY

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The Necessity for Teaching the Principles of Temperance

IF the views as to the value of abstinence from alcoholic beverages expressed in the other chapters of this book be accepted, a strong argument is admitted in favour of providing such adequate instruction and judicious persuasion as shall secure to each individual the preventive forces of accurate knowledge and moral incentive.

Those who have become the victims of the alcohol habit cannot readily be convinced of the error of their way. Even when their mistaken course is recognised and regretted, the power of restitution has often been seriously impaired, and in some cases it would seem to be hopelessly lost.

It is clear, therefore, that, on the grounds of reason as well as expediency, efforts should be made to provide rational teaching regarding the dangerous influence of alcohol and the evils which must result from alcoholism, to as large a number of our population and at as early an age as possible.

General Principles

In considering this very practical subject it is necessary to recognise the general principles which should guide our action. There is a sound scientific basis for the contention that the teaching of temperance should be commenced in the early years of life.

Our forefathers were wont to debate

> what cause
> Moved our grand Parents in that happy state,
> Favour'd of heav'n so highly, to fall off
> From their Creator?

Charles Darwin and his followers have delivered us from this mediæval idea and have given us the more inspiring thought that the human race has ever been, and still is, climbing *towards* a high estate. We know also that the history of the race is recapitulated more or less closely in the development of every individual.

We know that starting from the single, though complex, cell the individual in his development passes through stages that are now represented by the various orders of the "lower animals," and though at birth great progress has been made the infant is then but in the ape-like stage which preceded the fully human. Normally he rapidly gains successive steps, but each of these echoes long periods in the history of the race when men, albeit somewhat slowly and always with some relation to the requirements of their day, were attaining to greater abilities and evolving nobler qualities. The elemental struggles with nature and their fellow beasts for food, and the coarse ravening upon their prey gradually gave way to hunting with more artful weapons. As the mere acquisition became easier so there was more time to devote to the further preparation of their food; then to the embellishment of their dwellings. Only after considerable developments did Man turn his attention to the improvement

of means of communication by writing and still later to the use of such convention for registering thoughts for mutual meditation and study. Now if a child be watched he will be seen to pass through all these stages, and though happily some may be abridged the order can never be altered.

Fortunately the attention of educationalists is being more and more directed to the principle that teachers must endeavour to lead the unfolding mind by consciously emphasising the qualities that in former ages benefited the race, while curbing and minimising those traits that are reminiscent of crude and cruel instincts. The passive innocence of the babe is thus drawn on to the active benevolence of the man.

Now, in quite early years, particularly from three to seven, there are two conflicting interests, one which may be termed the natural animal appetite, the other, the higher instincts of love for home, of cleanliness, good order and care for others. The drunkenness we see to-day is because the first has not been adequately checked, nor has there been cultivated the second. Let those early years pass and our task in teaching temperance, *i.e.*, self-control, is enormously increased, because it has a gross and selfish appetite to contend with, and cannot summon to its aid the nobler aspirations of a citizen.

Seize those moments rightly and the children will delight in the simple exercises, which, after all, form the basis of habits. Especially should that potent factor, expression, be employed, and they should be directed, for example, to teach their dollies the elements of hygiene and the principles of temperance. Much of the elemental power of self-control may be cultivated also in play-time and in organised games. Such now receive definite recognition in the Code of the Board of Education.[1]

[1] See "Code of Board of Education," 1906, pp. vi. and 3. Also "Outline Scheme for teaching Hygiene and Temperance to the

Later, of course, the intelligent and conscious co-operation with the teacher's efforts at instruction must be gained from the child by the use of books and lectures.

These facts teach patience but they point also to the infinite potentialities that exist in a child ("of such is the Kingdom of Heaven") which may be realised by him if he be guided aright.

The Evolution of the Movement Favouring Temperance Teaching

Although much excellent temperance teaching has been accomplished in this country by means of private effort and associated enterprise, State action has been delayed.

As far back as 1830, according to the late Mr. Robert Rae, William Collins[1] made a suggestion that such teaching should be introduced into the schools. In 1852 John Hope, in connection with the British League of Juvenile Abstainers, inaugurated a weekly visitation of the day-schools of Edinburgh.

Thomas Knox, J.P., also of Edinburgh, wrote a series of useful letters,[2] which he addressed to Robert Rae, who was then editor of a newspaper published in Glasgow, and later was the Secretary of the National Temperance League.

In these letters Knox set forth cogent reasons why the school-book should be regarded as "the true precursor of the statute-book". He made little headway at the time, but in 1875 was present at the annual meetings of the British Medical Association, when it was unanimously

Scholars attending Public Elementary Schools". Officially issued by Board of Education. London: Wyman & Sons, 1905.

[1] "National Temperance League Annual, 1891" p. 36. See also "Temperance Society Record," vol. i., published by William Collins. Glasgow, 1830.

[2] "The Commonwealth" (Glasgow), year 1857, Nos. 195-214. Editor, Robert Rae.

resolved: "That steps be taken to induce the School Boards of the country to include among the subjects of instruction in elementary schools an accurate knowledge of the teaching of chemical and physical science respecting intoxicating beverages". In 1875, too, Sir B. W. Richardson's manual[1] was introduced into the Board Schools of London and of many other large cities. In that decade one of the lecturers of the National Temperance League gave 5,470 addresses in the London schools. In 1880 Frank Cheshire was appointed by the League to give lectures of a more scientific character[2] on alcoholic drinks in relation to physiology and domestic economy, and he continued this work till his death in 1894. These lessons were given in practically every elementary school in London, and in 1891 it was reported[3] that 102,500 reports written by the children had been received and 2,443 book prizes awarded. Rapid development followed, and in 1887 began the definite organisation of the School Scheme of the Band of Hope Union,[4] by which trained scientific lecturers are equipped and maintained, who shall visit the schools at certain hours. Within six months 200 boards in various parts of the country had accepted this offer of help, and in May, 1906, Charles Wakely, Secretary to the Union, was able to state: "These lecturers have, during the past sixteen years, visited on an average 3,600 schools a year, and have delivered in all 57,236 lectures (or more properly object-lessons), with 6,213,777 scholars and 207,959 teachers in attend-

[1] Richardson, B. W.: "Temperance Lesson Book". London, 1875.

[2] Cheshire, F. R.: "The Scientific Temperance Handbook". London, 1891.

[3] "National Temperance League Annual, 1891," p. 37 *et seq.*

[4] In 1900 there were in the United Kingdom 28,540 voluntary institutions of the nature of Bands of Hope, embracing 3,504,000 children and young people.

ance, and half of the number of children have sent in written reports of the lectures. Besides the above, lecturers, locally appointed, have been doing excellent service under the direction of various of the diocesan branches of the Church of England Temperance Society, the Irish Temperance League, and the North of England Temperance League."[1] Both the United Kingdom and the Scottish Band of Hope Unions are now taking steps to extend their educational work.

The Action of the State

Useful as this work has undoubtedly been, it must be recognised that, to make the teaching universal, the State must be responsible for the work. America, stimulated to action by the efforts of the late Mrs. Mary A. Hunt, has long adopted means for the teaching of physiological hygiene, with special reference to the effects of alcohol and other narcotics. Such instruction, begun in Pennsylvania[2] in 1885, is now compulsory in the United States in all schools under State or Federal control. About twenty-two million children are being educated under this system.

In our Colonies—Canada, Victoria, South and West Australia, New Zealand and Natal, considerable advance has been made.

On the Continent we find much has been accomplished in France, Sweden, Denmark and Holland, while other countries are preparing to follow suit.

In all the State schools under the control of our War Office, teaching of temperance has, for some years, been compulsory.

The State may, of course, for a time continue the

[1] *Band of Hope Chronicle*, p. 74. London, 1906.

[2] *School Physiology Journal*, Boston, Mass., June, 1906.

services of the able lecturers of the Band of Hope Union and the other societies to give object-lessons to the older classes, with some detail of the chemical, physiological and pathological properties of alcohol; secondly, it may train special teachers, who shall deal with the subject in all classes of a school or even in several schools; thirdly, and we believe this is the final solution to which we must come as soon as possible, though it does not exclude the former two, all teachers must be trained in the subject so as to be able to bring temperance into the school work in other ways than merely in the set lesson. Chiefly may references be introduced into the nature-study and observation lessons that are already part of the curriculum of most schools, but they may occur also in the course of various other lessons, such as the following: in arithmetic questions may be set on thrift, based on expenditure on drink and the number of the population; in dictation and reading books may be used which contain suitable accounts of the moral effect of intemperance, or simple statements as to the preparation and chemical properties of alcohol and the common alcoholic beverages; in writing temperance mottoes may be set as "copies"; in domestic economy the teacher should place alcohol in its proper category as a poison, and distinguish it from nutritious and wholesome foods.

But it must be repeated that long before a child is fit to grasp those acquirements that have been attained comparatively late by the race, for example, reading and writing, he is properly disposed to the elemental notions of discipline and order on an appreciation of which alone can be based any profitable discourse as to the details of alcoholic drinks and of their harmful effects.

Medical Opinion on the Teaching of Temperance

A certain number of the medical profession,[1] have been included from the first in the ranks of those who advocated "temperance" and then total abstinence. Memoranda as to the evils of ardent spirits and other alcoholic beverages, and as to the danger of using alcohol as a drug, and its frequent misuse, therefore, have been frequently signed.[2] In 1847 such a declaration was attested by upwards of 2,000 medical men of the United Kingdom and India, and medical manifestoes were issued again in 1871[3] and 1902. In 1876 Dr. J. J. Ridge inaugurated the British Medical Temperance Association,[4] which binds those medical practitioners and students who are personal abstainers to aid in the investigation of the effects of alcohol in health and disease. But notwithstanding the researches and lectures[5] by Sir B. W. Richardson, and the success of the practical experiment in treating disease without the ordinary recourse to alcohol demonstrated by the London Temperance Hospital, founded in 1873, the mass of medical opinion continued strongly in favour of alcohol as a therapeutic agent of the greatest value and of the widest application, and, further, regarded total abstinence as "intemperate".

It marked, therefore, a revolution in thought when in 1903 nearly 15,000 members[6] of the medical profession

[1] Compiled by Jameson, R.A.: "Doctors and Drinking". Manchester: United Kingdom Alliance Offices, 1905.

[2] *Temperance Society Record*, vols. i., ii., 1830, 1831.

[3] The original copy of this declaration is now in the library of the National Temperance League, Paternoster House, E.C.

[4] According to the Annual Report, 1906.

[5] Richardson, Sir B. W.: "Six Cantor Lectures on Alcohol"; "Action of Alcohol on the Mind"; "Brief Notes for Temperance Teachers," etc.

[6] As usual in temperance reform women took an enthusiastic part in this undertaking; there was scarcely a medical woman who did not sign and many gave further aid.

in Great Britain and Ireland signed a petition to the Central Education Boards urging that teaching in hygiene should be introduced universally into the public elementary schools. And it was claimed that "having regard to the fact that much of the degeneracy, disease and accident with which medical men are called upon to deal, is directly or indirectly due to the use of alcohol, and that a widespread ignorance prevails concerning not only the nature and properties of this substance but also its effects on the body and the mind," there should be included in the simple hygienic teaching elementary instruction at an early age on the nature and effects of alcohol.

The Chairman of the Committee formed to gather the names for this petition was Sir William Broadbent, and he was associated with such well-known men as Sir Thomas Barlow, Sir Victor Horsley and Professor Sims Woodhead. The Committee were strongly supported by the British Medical Association and many other leading members of the profession.

In 1905 the Board of Education introduced into their official document[1] a hint that teaching in hygiene and temperance should find a place where possible, and added as an appendix a chapter on the evil effects of alcohol.[2]

[1] "Suggestions to Teachers," 1905, Cd. 2638 (p. 86, App. viii,).

[2] A very large number of works intended for teachers and scholars dealing with hygiene and temperance are now available. It is impossible to venture on a recommendation of any particular works. No book should be approved as a text-book for any school unless carefully examined by a competent judge. Not a few of recent volumes manifest considerable prejudice when dealing with the question of the action of alcohol. Several excellent manuals require to be read with discrimination when the drink problem is discussed. The following by no means complete list is here given merely as a convenient bibliography:—

Barnett, S. A.: "The Making of the Body". London.

Blaisdell: "The Child's Book of Health". London: Ginn & Co.

Blaisdell: "Life and Health". London: Ginn & Co., 1902.

Blaisdell: "Our Bodies and How we Live". London: Ginn & Co., 1904.

It is stated in this Blue Book that "it is most desirable that every scheme of instruction for older children should

Brodribb, T.: "Manual of Health and Temperance". London: Longmans, Green, & Co.

Cheshire, F. R.: "The Scientific Temperance Handbook". London: National Temperance Publication Depôt. 1891.

Cologan, W. H., and Cruise, Sir Francis R.: "The Temperance Reader". Dublin: Eason & Son, 1902.

Cutchley, H. G.: "Hygiene in School: A Manual for Teachers". London: Allman & Son, Ltd. 1906.

Edwards, W. N.: "Proving Our Case: A Scientific Exposition of the Nature and Effects of Alcohol". London: S. W. Partridge & Co. 1905.

Edwards, W. N.: "How to be Well and Strong: Boy's Book of Health". London: Melrose.

Edwards, W. N.: "The Child's Book of Health". London: S. W. Partridge & Co.

Finnemore, W.: "The Addison Temperance Reader". London.

Foster, Sir Michael: "Simple Lessons on Health". London: Macmillan & Co., 1905.

Hall, Jeannette, W.: "The New Century Primer of Hygiene". Edinburgh: James Thin.

Hall, Winnifred S.: "Intermediate Physiology and Hygiene". Edinburgh: James Thin.

Hoskyns-Abrahall, W.: "The Health Reader". London; Cassell & Co., 1906.

Lees, F. R.: "The Science Temperance Text-book". London: National Temperance League. 1884.

Merick, H. M.: "Oral Lesson Book in Hygiene". Edinburgh: James Thin.

Nabarro, David: "The Laws of Health". London: Edward Arnold. 1906.

Norris, Edwin J.: "Primer of the Physiological Action of Alcohol". London: Swan Sonnenschein & Co., Ltd. 1900.

Pirie, George A.: "Notes on Health and Temperance". Dundee: William Kidd. 1902.

Richardson, Sir B. W.: "Brief Notes for Temperance Teachers". London: National Temperance Publication Depôt. 1883.

Ridge, J. James; "The Guide to Temperance for Young Abstainers and More Advanced Students, and for Use in Bands of Hope". London: R. J. James. 1903.

include a short series of lessons enjoining temperance as regards the use of alcoholic beverages and stimulants," and proceeds to suggest that these lessons may be among those given "in elementary science, knowledge of common things, cookery or household management". This was a distinct advance on the communication from the Board to the Cheshire Education Authority in the previous year to the effect that provision for such teaching was illegal.[1] Of course amendment is still required; principally the word "older" should be deleted, and the idea that temperance connotes a moderate use of a noxious thing must be abandoned.

In 1906 the Medical Committee above referred to followed up the matter by presenting a Memorandum to the President of the Board of Education to urge:—

(1) That instruction in Hygiene and Temperance be specifically introduced into the curriculum of the Code.

(2) That facilities for Special Training in these Subjects be afforded to Teachers.

(3) That these Subjects be reported on by H.M. Inspectors.

They were strengthened in their appeal by the fact that in response to a circular letter addressed to them by the Medical Committee in November, 1904, a large number of Local Education Authorities, including nine

Smyth, A. Watt: "Text-book of Hygiene Based on Physiology for School Teachers". London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1905.

Taylor, W.: "A First Reader in Health and Temperance". London: Church of England Temperance Society. 1905.

Taylor, W.: "The Physiological Aspect of Temperance. Elementary Lessons on Alcohol and its Effects on Body and Mind." London: Church of England Temperance Society. N.D.

Wilson, Andrew: "How to Keep Well", London and Edinburgh: W. & R. Chambers, Ltd. 1906.

[1] *British Medical Journal*, p. 1231, 29th Oct., 1904.

County Councils, fifteen County Boroughs, most of the Scottish School Boards, etc., had expressed their cordial approval of the main idea, and, in many cases, had put it in practice.

A similar memorial, presented by the Board of Hygiene and Temperance, emphasised the necessity for the training of teachers. This Board is a powerful body, comprising members of Parliament as Mr. Leif Jones and Mr. Charles Roberts, and other temperance leaders, and has for its Chairman Mr. Pearce Gould. To an influential deputation that waited upon him to support these memorials on 12th November, 1906, Mr. Birrell gave cautious but favourable replies, and much may be hoped for in the near future if pressure of public opinion is maintained.

The Teaching of Teachers

Now, how are we to teach the teacher? This is one of the problems that confronts us at the moment. Not much so far has been done for teachers as a body. The Temperance League in 1880 held a meeting in the Jerusalem Chamber when Canon Fleming and Sir B. W. Richardson addressed them, and has arranged an annual breakfast meeting since. Prizes also have been awarded to teacher-students in training colleges on the result of a competitive examination.[1]

The Medical Committee have prepared a Provisional Syllabus for Teachers, consisting of a series of lecture-demonstrations, which it is thought would be arranged by an Education Authority at a centre convenient for teachers from a number of schools. Similar courses have been in existence for several years in connection with the Science School at Bradford and at Wakefield; another is being promoted at the London School of Economics

[1] Gourlay, W.: "National Temperance Jubilee Biograph," pp. 318-325. London, 1906.

(University of London) and the Birkbeck College. The amount of strictly temperance work in these courses varies somewhat, and occasionally needs amplifying.

If all teachers are to be instructed in this subject it will, of course, be needful for it to be included in the curriculum of the training colleges. This is the only logical outcome of the statement issued by the Board of Education, which, though as above stated it is carefully guarded from a whole-hearted denunciation of alcohol, says: "For all these reasons beer, spirits, or wine are by far the most dangerous things that people are ever likely to drink".[1]

In this connection it may be noted that some fear that existed that there might be opposition on the part of the teachers at having another subject thrust upon them when they already felt the burden of a crowded curriculum is happily passing away. In June, 1905, at the invitation of Mr. McAdam Eccles a number of the leading members of the National Union of Teachers met several of the Medical Committee. While the stress of the work in the schools was freely recognised the immense importance of this new subject was admitted by all. And at the annual meeting of the National Union at Scarborough in 1906 the teachers generously acclaimed the appeal of Sir Victor Horsley that they should assist to the best of their ability.[2]

The Teaching and Practice of Temperance in the Home

As the effect of the training described above is seen and the children now to be taught come to have homes and children of their own, we may confidently hope that the influence in increasing numbers of these homes will be

[1] "Suggestions to Teachers" (Cd. 2638, p. 150).

[2] *The Temperance Record*, May, 1906.

found to be on the side of total abstinence. The total effect therefore will be cumulative and progressive, so that in the course of two or three generations much should have been accomplished.

For this reason and for the reasons stated at the commencement of the chapter we have been dealing with the subject mainly as one for the schools, but much remains.

Neither our obligations nor our capacities will be fully discharged if we leave any stone unturned in seeking to drive out an evil so prevalent as is drunkenness at the present time. Whenever and wherever possible we must anticipate that future effect of school instruction on the homes by persuading parents who are addicted to this habit to abandon it, both for their own sake and for their children. Wherever we can succeed in this we greatly improve the chance for the offspring of that home to grow up with an abhorrence for strong liquor.

Awful examples seldom deter through fear of similar consequences, and a child, accustomed to witness the habitual use of intoxicants, is likely to have it rooted in his brain that they are at least inevitable and as such to be accepted and, as far as may be, enjoyed.

In fact if we consider why men drink we shall find that the main reason is the inherent natural tendency to be content with a lower place in life where strenuousness is not and aspiration irks not. Alcohol enables a man to do this without the distress of self-conviction; he is happy in the mire because he is not conscious of the slough. On the other hand, when sober he is very much aware of the stress of life, the keen competition for necessities, let alone luxuries, and the wearing pressure of warnings to such a man are of absolutely no avail. The only hope is to arouse in him an interest in affairs outside himself. The most effective stimulus is to get him to abstain for the sake of a friend whose downfall he can appreciate.

The Teaching of Temperance and the General Public

For this outside teaching, of course, all religious societies and other organisations, having for their aim national righteousness or the welfare of man, will only be using their opportunities aright if from time to time they have carefully reasoned and well-delivered addresses on temperance by competent lecturers aided by sound lantern slides and diagrams. These, nowadays, should emphasise the injurious effects of small or dietetic doses of alcohol, and utilise the mass of scientific evidence obtained for us of recent years.

(*a*) In this connection thanks are due to those who instituted the Lees and Raper Lectureship, under the auspices of which several intensely valuable and instructive lectures have been delivered and published.

(*b*) To promote and encourage the systematic study of the temperance question in all its aspects, the Temperance Collegiate Examination Board was instituted and from this arose an association, with Professor Sims Woodhead as president, which was incorporated in 1904. The association seeks to attain its objects "(i.) by the provision of an Examination Board, (ii.) by the award of prizes and certificates, (iii.) by the promotion of classes for the study of temperance subjects". Intending lecturers will do well to obtain such a certificate.

Again, much good is being done by local authorities issuing posters as to the evils of alcoholism as suggested in the Report of the Inter-Departmental Committee on Physical Deterioration.[1] Most readers will have seen copies of one form or another of the posters that are being used up and down the country. Thomas Fidler[2] of

[1] Report (Cd. 2175), vol. i., par. 178.

[2] Published by W. J. Blacket, Northbrook Street, Newbury.

Newbury has collected the names of over 100 cities and boroughs, with a population exceeding 12,000,000, that have issued these bills. The credit for having initiated the movement is due to Woolwich. This borough adopted a poster drawn up by their medical officer of health, at the instigation of the Central United Temperance Council; it contains selected passages from the Deterioration Report and a translation of the poster authorised by the Government in France. In some cases a leaflet has been distributed to every house in the town, and in Hull prizes were given to the children who wrote the best essays on the subject-matter of the placard;[1] a most successful enterprise that might well be repeated elsewhere. One of the fallacies that these posters help to explode is that alcohol is a stimulant, and many point out that, on the contrary, it is a narcotic, under the influence of which vice and disease are readily spread.

Other posters that have proved valuable are those issued by the Friends' Temperance Union which contain trite sayings of eminent men in favour of abstinence.

The Instruction of Medical Students and Nurses

One point of great moment is the question of thorough instruction of medical students in the schools and hospitals. A largely attended conference was held at the Examination Hall, Victoria Embankment, in March, 1905,[2] when the inadequacy of the present teaching to the needs of the day was pointed out. Sir Thomas Barlow showed through what a revolution in thought as to the efficiency of alcohol as a drug, and as to the indications for its exhibition, we are passing.

[1] See "Souvenir of the Essay Competition in the Hull Elementary Schools on Physical Deterioration and Alcoholism." Hull: Waller's Central Printing Co., Ltd., 1906.

[2] See *British Medical Journal*, vol. i., p. 735, 1905; see also leader in same issue.

Recent works on Materia Medica are declaring that its pharmacological value is illusory except in rare conditions, and articles such as that by Dr. J. Hay[1] are demonstrating that not only does alcohol fail to save life, but in its "therapeutic" administration appears often to precipitate a fatal issue in acute diseases. At present there is not the systematic and thorough discussion of these matters in the lecture-courses that is needed, and most medical men are left to learn these truths slowly by experience, or occasionally by articles in the medical journals.

Nurses, too, are very prone to regard brandy as a certain aid in all cases of extremity. Anxious to *do* everything they can for their patients they feel satisfied only when giving frequent and liberal doses. We cannot blame them unless the futility of such methods is thoroughly explained.

At the present day our universities do much to control educational work throughout the country, partly because of their prestige and intellectual influence, and partly because many intending teachers give special attention to those subjects required to secure such degrees and distinction as will enable them to obtain the most lucrative positions in the scholastic world. It is of the utmost importance, therefore, that university authorities should make provision for adequate study of hygiene and temperance.

The Need for Organised Research

Periodicals such as *The British Journal of Inebriety*, *The American Journal of Inebriety*, *The Medical Temperance Review* and others are furthering scientific investigations into

[1] See article on "Pneumonia," by John Hay, M.D. *The Lancet*, p. 1643, 11th June, 1904. Of 150 cases of acute pneumonia treated in the same institution the forty-seven which came under his care received no alcohol; the results showed a difference in mortality in their favour of 15 per cent. as against the rest who "received alcohol when the ordinarily accepted indications for its use arose".

the problems of alcoholism, and much greater use might be made of these journals by students of this question, whether medical or lay. Those who have the ability might aid in this part of temperance work by providing funds for distributing copies of these journals in quarters which hitherto they have not reached.

Funds are needed also to carry on experimental work. Von Kraepelin's achievements in the realm of mental physiology should be imitated and extended in this country, and now with the objective methods of testing the immunising power of the blood elaborated by Sir Almroth Wright we should proceed to estimate the effect of alcohol on the opsonins and other bacteriotropic influences.

It will not do to leave so vital a concern as the knowledge of a medical practitioner on these matters to chance or to the interest he may have for investigating the sequel of methods of treatment that he has adopted as traditional routine from his hospital training. The nation needs light and leading, but if they, to whom the people look for guidance, are themselves blind, both are in danger of falling into the ditch.

Let those whose aid is sought for the maintenance of physical vigour and the control of man's manifold ills join the ranks of progress and the day will hasten when in these happy isles there shall be a healthy and vigorous, because a sober, nation.

XIII

ALCOHOL AND NATIONAL DETERIORATION

BY

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The Inspection of a Nation

OCCASIONALLY a crisis occurs in the history of a nation, similar to that in the life of an individual, when a pause becomes necessary for introspection and possibly for a reconstruction of its affairs and conduct. Such a pause occurred from the unpreparedness of the country and the muddle and surprises which it experienced during the South African war, and an opportunity offered for reconsidering our position through a lesson so costly and severe that it could not reasonably be neglected. The cry of "efficiency" from one statesman and the call for "the use of reason" from another found a ready echo in the periodicals and newspapers of the hour, and in consequence we made several efforts to take stock of our position with the object of reconstruction. So far back as April, 1903, it was pointed out in the *Contemporary Review* that 60 per cent. of recruits were, through physical deterioration, unfit for army service. As a result of this warning, the then Home Secretary approached the Royal Colleges of Physicians and Surgeons in regard to a public

inquiry, and the reply of the college authorities included among other points a reference to the changes in the conditions of life within the last fifty years, especially mentioning in this particular changes in food and drink, these being possibly two of the most serious causes in the production of deterioration, and there was to-day a wholesale substitution of chemically prepared products for fresh food, and also a greatly increased use of artificial stimulants of every kind.

The Duke of Devonshire, as Lord President of the Council, after stating that the physical deterioration of the lower classes was a menace to the military and industrial interests of Great Britain, appointed a special Inter-Departmental Committee to inquire as to the existence of such a condition, as to its causes, and also as to what steps should be taken for its prevention, and how such deterioration could be most effectually diminished.

As the success of a nation, whether in peace or war, depends greatly upon the physical state of its individual members, and as our bed-rock in this country is the industrial community, it must follow that this section should be strong, vigorous and healthy.

There can be no progress and no security for us in the world's markets without full and adequate attention to this side, and there certainly can be no progress or gain in our population, wealth, or industry without a sound physical basis, which is so closely related with our commercial supremacy. As to this aspect the mind of the people is quite made up. The connection between alcohol and impaired physique is an accepted and irrefragable fact, and the evidence placed before the Inter-Departmental Committee supports this view and is most significant, for fifty-seven out of the sixty-eight witnesses referred to alcohol in some form or another as the cause of deterioration. It was also emphasised by the further

observation that drink and drunkenness were causes of arrested growth and development, and that a rapid amelioration of physique was known to take place with a decrease in such conditions as drink and drunkenness, which were the direct cause of physical infirmity in the children, and the indirect cause through parental improvidence, idleness and neglect.

Alcoholism—An Ancient Malady

The question of drink and drunkenness is no new thing in England. The statutory licensing of ale-houses began in 1495, but it was not until 1606 that—to use the words of the Act—"the loathsome and odious sin of drunkenness" was made a statutory offence punishable by fine or confinement in the stocks. Throughout the Middle Ages and down to the year 1640, the provincial and diocesan ecclesiastical courts exercised an active and strict jurisdiction in respect to moral correction, and sternly punished the "infamous and offensive" sin of drunkenness. Apart from special local legislation this law obtained in 1872, when the Licensing Act of that year made it an offence punishable on summons by fine to be found drunk in any public place or on any licensed premises. In London alone in 1905 over 50,000 arrests were made by the police, with incapability and disorderliness as qualifications.

Drinking Habits of To-day

In spite of the Chancellor of the Exchequer's statement as to diminution of revenue through the excise, it is generally acknowledged that drinking habits are more common to-day than ever, and there seems to be a consensus of opinion that while there is more drinking there is less drunkenness. More drinking and less drunkenness sound somewhat paradoxical, but the explanation is found

in the great increase of drinking among women, who drink together more, and who "treat" each other more than men do. Custom has much to do with drinking as well as with other habits, and the fact that beers are brewed lighter than formerly, and larger quantities are in consequence consumed, partly account for this.

Alcoholism Among Women

During the present generation women have—through the franchise and by increased legal control of their own affairs—become more independent of men, and these changes have rendered them less amenable to "communal vigilance". Women are also now not ashamed to be seen in public-houses as they used to be. It is in these days no longer a scandal to see women enter bar parlours; consequently "ladies' saloons" have greatly multiplied, and the public-house has been rendered more attractive. Even among the better classes it has become customary with many women to drink "wine" when shopping. Women are now more the companions of men in sports, games and industrial pursuits, and the freedom to work on equal terms with men has caused them to become liable to the same depressing physical and mental influences as man, and for which stimulants offer a temporary relief. The dulled sensations of wear and tear and fatigue are soothed by the use of stimulants, which temporarily excite psychic and psycho-motor processes.

The emancipation of women has thus apparently had a contradictory effect; on the one hand there is more industrial and financial independence, and on the other there is more comradeship, and the unexpected result of both is more drinking, which upon reliable statistics, may legitimately be laid to the female sex. Custom may be said to divide drinking into convivial drinking for good

fellowship, and industrial drinking as an aid to labour. The former rises with a rise in wages and with commercial prosperity, the latter is the traditional exchange of drinks for business purposes; it varies with the particular form of occupation and is independent of prosperity. Convivial drinking up to a certain stage leads towards drunkenness, but it is against all manners to get drunk, which is really anti-social and non-convivial, for conviviality stops as the stage of drunkenness is reached. Industrial drinking on the other hand leads directly to chronic alcoholism and fatal "soaking," and it is this form of drinking which swells the Registrar-General's death list—whilst convivial drinking swells the police court list. There is also in drinking a sex difference. Women, having less restraint than men, become more rowdy, and one drunken woman in a street may set many others drinking, because women talk to each other and drink together more than men do.

Those who have made a study of this question frequently ask—Why do women drink, and at what age do they commence? No doubt some of the answer is found in the fact that so many more women are now without family ties and cares—for there has been a definite and continuous decrease in the birth-rate for some years past—and this solitude causes them to drink. They drink because they have nothing or little else to do, and there is an acknowledged relationship between idleness and drink; indeed this was especially discussed at the International Penitentiary Congress in Buda Pesth in September, 1905. In regard to idleness, Ruskin remarks, "It is only by labour that thought can be made healthy, and it is only by thought that labour can be made happy". There are overwhelming statistics which demonstrate the dependence of crime upon drink and idleness; the proportion of offences perpetrated on Saturday, Sunday and Monday, and resulting from drink, was thirty-three to four when compared with

the offences committed on the other days of the week, and this Congress moved a special resolution in favour of placing additional restraints upon the sale of drink from Saturday to Monday.

Doubtless also many women drink to alleviate small ailments or to drown home troubles. The cares of domestic life with its worries and anxieties undoubtedly cause many women to drink, and it is stated by Charles Booth that in the poorer neighbourhoods of large cities the attendance at school forms a correct indicator of the intemperance of mothers, for children attend less regularly during the early part of the week, because when the mothers are out the children have to stay at home. The facilities afforded through grocers' licences also tend to increase drinking among women. It is a satisfaction to know on good authority that young women rarely drink, and that it is very exceptional to see a young girl drink.

The "courting" period is stated to be the time when most young women commence drinking; nevertheless, it is rare to see women drinking freely before marriage, although after marriage many of these become "soakers". With these data it is not surprising to find in the upper section of the working-classes, *viz.*, those who earn decent and regular wages, that the money spent in drink is out of all proportion to their earnings. It is computed that fully one-fourth of the weekly wages go in drink, the consequence being that even these people are always poor—indeed poverty results far more frequently from "drinking habits" than from actual drunkenness—which seems to suggest that the best working hypothesis for temperance is total abstinence.

The "Drinking Habit"

Charles Booth states that although extravagance, idleness, incompetence and ill-health are contributories to, as

well as accompaniments of, poverty, drink in the drinking habit is its actual genesis, and a history of the drink habit may be obtained in almost every case that comes up for relief. These drinking habits are a serious problem to the community, and many of us know too well the loss of employment, the destruction of homes, the great deterioration in health, and the ravages caused by insanity and by all forms of physical disorder brought on through the "drinking habit," so that the community is under an obligation to control these habits among its members, for alcohol is in fact as well as in substance most often the root of poverty and distress. It was shown in evidence submitted to the Inter-Departmental Committee Report that alcohol was first among the various influences which retarded improvement, and the view was publicly expressed in the Report that if the drink question were removed, then three-fourths of the difficulty in regard to poverty and deterioration would disappear with it. It was also definitely pointed out that the abuse of alcohol produced poverty and that poverty in its turn produced the "drinking habit," which deadened all desire for improvement—a vicious circle from which there was no emergence!

The National Consumption of Alcohol

What do we find in regard to the national consumption of alcohol? If we take the years for which the last census returns are available, *viz.*, 1881 and 1901, we find that the population of the United Kingdom has increased 19 per cent. The drink expenditure for the same period has increased 24 per cent. In the quinquennium 1880-84 inclusive the annual average expenditure upon intoxicating liquors was £143,799,641, in the quinquennium 1900-04 inclusive it was an annual average of £177,920,339. The annual average of prosecutions for drunkenness in England

and Wales for the quinquennium 1880-84 inclusive was 185,643. The annual average for 1900-04 inclusive was 216,424, but there is one happy conclusion in spite of these figures which shows that although the population of England and Wales increased 25 per cent. between 1881 and 1901 the prosecutions for drunkenness increased by 17 per cent. only, showing that although there is increased drinking there is comparatively less drunkenness.

Alcohol and Mental Deterioration

Those of us who are behind the scenes know that drunkenness is by no means the only evil attendant upon the consumption of intoxicants. The mental aberration which follows drinking, even in what is often described as moderation and short of actual drunkenness, is a real burden to the State. The latest information from the Local Government Board Department shows that £36,264,702 have been spent upon pauper lunacy during the last tweny-five years, from 1880 to 1904 inclusive, and that whereas in 1880 there were only 65,345 pauper lunatics in England and Wales, in 1905 there were 109,100. Over 120,000—probably more than 1 in every 280 of the whole population—are private or pauper lunatics, and are at the present time incarcerated under medical certificates in the various asylums of this country, an increase of 49 per cent., whilst the population has only increased by 25 per cent.

It is no easy matter to determine with exactness the cause of any disease, and in respect to mental disease, when a plurality of causes so often operate, this becomes a task of extreme difficulty; and frequently underlying the causes ascertained is some inherited or acquired frailty of the brain tissue and structure which renders the individual more prone to be affected by circumstances which in the

healthy would have less influence. It is therefore fair to state that intemperance may be the effect as well as the cause of insanity. It is computed, and the statistics cover a period of several years, that alcoholic intemperance is correctly attributed as an assigned cause of insanity in 22 per cent. of all the men admitted into asylums for the insane, and in 9·4 per cent. of all the women; and it is interesting to note that the Lunacy Commissioners in their report (dated 1905) to the Lord Chancellor, published as a Blue Book, definitely acknowledge that "alcohol is a brain poison".

Since the opening of the London County Council Asylum at Claybury in 1893, the statistics for the first twelve years show that out of the 10,688 persons (4,739 men, 5,949 women) who have been received, no less than 1,057 males and 742 females have been received with drink as an exciting or predisposing cause of their insanity, a proportion of 22 per cent. of the men and 12 per cent. of the women, or a total of 17 per cent. of the whole.

During the same period a total of 43,694 persons have been received into all the lunatic asylums of London, of whom 7,182 persons, *viz.*, 16 per cent., were definitely ascertained to owe their insanity to drink or intemperance. As to the occupation of these persons, information collected at Claybury from the statistics for the year 1905 show some interesting facts as to the destructive influence of alcohol upon the latest acquired or higher functions. Several of these were accountants, clerks, cashiers, brass finishers, printers and compositors, coppersmiths, silversmiths, telephone workers, dental instrument makers, musicians, architects and engineers. All these were employments upon which the livelihood depended, and rapidity of accurate mental reaction was necessary for their effectiveness.

Delicate muscular or manipulative technique, *i.e.*, skilled

workmanship, and any complex mental effort is quickly impaired if not destroyed by alcohol, and the temptation once yielded to is more readily yielded to on subsequent occasions, the self-restraint becoming weaker, hence the "repeaters" or recidivists of our police courts, and the recurrent attacks of insanity in our asylum statistics. As alcohol prepares for a first conviction, so on the release from the prison or the asylum the same evil influence has an easier victory in the second and subsequent contests, even in spite of philanthropic, religious and educational influences brought to bear upon them by After-Care Associations, Prisoners' Aid Societies and Police Court Missions.

Alcohol, whilst it adds to the roll of asylum inmates, is also responsible for a very considerable addition to the roll of pauperism, of which from 60 to 80 per cent. is caused directly or indirectly through drink. The expenditure in the relief of the poor in England and Wales for the quinquennium 1880-84, inclusive, averaged £8,221,093, whereas from 1900-4 inclusive, it averaged £12,319,108, an increase of 50 per cent. as against 25 per cent. increase in the population. Further, the Lord Chief Justice of England states, "If sifted, nine-tenths of the crime of England and Wales could be traced to drink". The number of convicted persons for 1904 was 198,395 into prisons, of whom 85,799 were sent to prison for the first time, and were recruits of new and young material to the criminal population—higher figures than have ever occurred before. It is thus demonstrated that alcohol not only causes misery and disease, but it actually prepares and manufactures sane and moral citizens for drunkenness, criminality, pauperism and insanity.

When we consider the misery and degradation of individuals themselves, and the privation and poverty of those dependent upon them, also the economic aspect as regards the insane alone, of losing the work and usefulness

of these persons—figures quoted above—mostly men and women in the prime of life, and to feel that there has been the further burden of their maintenance upon the rates, whilst in asylums, and actually at the cost of the more sober and industrious section of the community who are compelled to pay rates in support of these persons, most of whom are to be kept for the rest of their natural lives; surely this gruesome aspect of the "drink question" may well give us pause to reflect what more we can do to promote the cause of temperance! These cases are most difficult to treat even in asylums, and they are also most unsatisfactory. If they temporarily recover their mental balance, they often quickly relapse, and when they do not recover they are more than any other variety of insane persons the most liable to death from consumption and other forms of tuberculosis.

XIV

ALCOHOLISM AND LEGISLATION

BY

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Science and Legislation

LEGISLATION may be an Art, but at present it cannot be considered a Science. In the past, legislation, dealing with the so-called liquor traffic, has practically ignored the sanitarian's ideals, and paid but little attention to scientific facts. It is surely time that the teaching of the scientist and the demonstrations of the hygienist should be allowed to influence the thought and action of law-makers. Law should now become the servant and not the master of science.

For long alcohol has been a disintegrating factor in human life, although not always treated as such by patriarchs, prophets and rulers.

Plato, impressed with the fact that drunkards begat drunkards, forbade the newly married to drink wine.

Buddha and Mahomet knew enough of divine hygiene to interdict the use of alcohol altogether.

Moses was more diplomatic, and only enforced total abstinence upon "priests" and "the children of Israel,

who desired to separate themselves unto the Lord," while the modern Christian only too frequently condemns the drunkard for incontinence, while congratulating himself upon his capacity to sin against the laws of health in moderation.

What religion did for the East by prohibition science is seeking to do for the West by evolution. Ideas govern mankind the world over. The East saw nothing but evil in alcohol. The West liked it too well to see ought else but good. So far as the West is concerned the position may be represented by an almost interminable ladder: at one end are those dominating the idea that the use of alcohol far outweighed its abuse, with Free Trade in Drink as the natural corollary; and at the other end are those who claim that the abuse far outweighs the use, with Total Prohibition as the logical corrective. Some form of restriction, as a rule, has prevailed through the centuries. The fascinating, alluring and illusive characteristics of alcohol have always tended to blur the perception of the truth and to blunt the reason. The mission of science is to emancipate from the thraldom of ignorance and error, misconception and misrepresentation.

The Aims and Objects of Legislation Regarding Alcoholic Liquors

The subject of legislation and alcoholism may be viewed from various standpoints. Amongst the chief are educational, ameliorative, restrictive and preventive measures.

The educational standpoint, as perhaps the most important, must be considered first. Laws which have not the sanction of the majority of a free and informed people are deprived of much of their efficacy. In a modern state we say it is little good legislating in advance of

public opinion. At the same time we should not forget that legislation, in advance of public opinion, may stimulate thought and advance truth.

From whichever position we look at the subject, education and enlightenment stand out, like pillars of cloud by day and pillars of fire by night, as essential to all great legislative ends. Much improvement in social and national standards is due to public opinion quite apart from statute law, and is in fact due to what we well call "unwritten law".

For the purpose of creating a healthy public opinion, various temperance and philanthropic organisations in this country inaugurated temperance teaching in the public schools. Special lectures were provided by these voluntary agencies, and something like half a million children in the upper standards, out of five and a half million attending school, received one or two lessons and demonstrations in the action of alcohol upon the human body.

The Report of the Inter-Departmental Committee on Physical Deterioration aroused the medical profession from a condition of culpable apathy, and in 1904 nearly 15,000 medical practitioners signed a petition asking that the teaching of hygiene and temperance should be made compulsory in all elementary State-aided schools. The Board of Education have, as a result, issued a scheme permitting the local education authorities to introduce these subjects into the school curriculum. Now that this important principle has been admitted, there is a prospect of at length bringing England into line with France, Germany, Sweden, the United States of America, Canada and Natal, in all of which countries teaching in hygiene and temperance is compulsory, and the teachers are properly trained and duly qualified to deal with these subjects.

The proposed Education Bill of 1906 wisely insisted

upon the necessity for local authorities to provide medical inspection for all children at school, and to supply meals where necessary for underfed children. Justice therefore cries aloud the more that the truth in regard to the danger of alcohol shall be thoroughly taught in our schools. Undoubtedly intemperance is one of the prime causes of parental neglect and cruelty to children. It is difficult to imagine any form of torture more painful to bear and more dangerous to child and national life than the chronic starvation of the little ones.[1] Children should be taught that they may injure themselves by taking alcohol both now and when they grow up. "To be forewarned is to be forearmed."

How far want of skill and economy in cookery among the working classes is responsible for intemperance it is difficult to say; but drinking apart, it is a national calamity that nine out of ten schools are without facilities for teaching the art of cookery and the science of domestic economy. In the latter I include the functions of motherhood. In consequence of this neglect our daughters enter married life unfitted for maternal and domestic duties, infant mortality continues unabated, while many of those who survive are frail and crippled beings, stricken with rickets, scrofula and other preventible diseases. These are recruits for the ever-increasing army of unemployable and hopeless dependants and deficients. England sadly needs a Minister of Public Health. After all, the capacity of a Minister of Education is limited, and the nation has no right to expect him to be a universal protector.

Recently the Public Health Committees of Town and County Councils have taken up the educational movement and placarded posters on the walls and in public convey-

[1] Special Report, Select Committee (House of Commons) on the Education (Provision of Meals) Bill, 1906, and the Education (Provision of Meals) (Scotland) Bill, 1906. Cd. 288.

ances, setting forth in popular language the A B C of Alcoholism, so that he who runs may read.

The following poster issued by the City Council of Hull is an excellent specimen of the new diplomacy :—

"PHYSICAL DETERIORATION AND ALCOHOLISM.

"The Report of the Committee, presented to Parliament by command of His Majesty, states that :—

"THE ABUSE OF ALCOHOLIC STIMULANTS *is a most potent and deadly agent of physical deterioration.*

"*Alcoholic persons are specially liable to tuberculosis and all inflammatory disorders.*

"*Evidence was placed before the Committee showing that in* ABSTINENCE *is to be sought the source of* MUSCULAR VIGOUR AND ACTIVITY.

"*The lunacy figures show a large and increasing number of admissions of both sexes which are due to drink.*

"The following facts, recognised by the Medical Profession, are published in order to carry out the recommendation of the Committee, and to bring home to men and women the fatal effects of alcohol on physical efficiency :—

"1. ALCOHOLISM IS A CHRONIC POISONING, resulting from the habitual abuse of alcohol (whether as spirits, wine or beer), which may never go as far as drunkenness.

"2. It is a mistake to say that stimulants are necessary for those doing hard work; this can usually be done better without alcohol.

"3. Alcohol is really a narcotic, dulling the nerves like laudanum or opium. Its first effect is to weaken a man's self-control while his passions are excited; hence the number of crimes which occur under its influence.

"4. For persons in ordinary health the practice of drinking even the milder alcoholic drinks apart from meals is most injurious.

"5. The habit of drinking to excess leads to the ruin of families, the neglect of social duties, disgust for work, misery, theft and crime. It leads also to the hospital, for alcohol produces the most various and the MOST FATAL DISEASES, including paralysis, insanity, diseases of the stomach and liver and dropsy. It also paves the way to consumption, and frequenters of public-houses furnish a large proportion of the victims of this disease.

"6. Alcoholic abuse complicates and aggravates all acute disease; typhoid fever, pneumonia and erysipelas are much more fatal in the subject of alcoholism.

"7. In short, alcoholism is the MOST TERRIBLE ENEMY to personal health, to family happiness, and to national prosperity.

"By Order of the City Council,
"J. WRIGHT MASON,
"Medical Officer of Health.

"TOWN HALL, *January*, 1906."

Something like a hundred different posters have now been issued "by authority".

How far the "wave of temperance" indicated by the decline in the national drink bill is due to such simple measures as these, I must leave to the decision of others better able to judge. The times are surely ripe for further action dealing with the alcohol problem as a part of practical hygiene and rational temperance teaching. For instance, every County Council and every Borough Council should have a properly equipped *Medical Officer of Health*. The duties of these Officers should include, amongst others, the collection and analysis of scientific data on the relationship between drink and overcrowding, alcoholism and unemployment, intemperance and infant mortality, the facilities for drinking and its effect on personal and public health, and indeed all data bearing on these subjects.

Further, medical practitioners should be required by law to furnish duplicate death certificates directly to the public authorities, and such documents should be treated as private and confidential. By the present system these certificates are given to the relatives, and doctors for obvious reasons cannot always state the naked truth with regard to alcohol as an ætiological agent. Until this important reform is effected the Registrar-General must of necessity remain unable to furnish accurate vital statistics, and statesmen will still stumble in twilight. So colossal is the ignorance and the morbid appetites of the people that nothing but persistent bombardment with unerring facts will awaken what Dr. Clouston has well called the "health conscience" of the nation.

Ameliorative measures.—Under this heading such important subjects as housing, garden cities, allotments, conditions of labour, rate of wages, hours of employment, causes of unemployment and counter attractions to the public-house demand attention. The drink problem is but a part of a much larger problem touching all human interests.

Undoubtedly, unwholesome homes are responsible for much drinking. Every man's house should be his castle, but if the castle is little better than a pig-sty where human beings are indiscriminately huddled together under circumstances of dirt, discomfort and indecency, what wonder if the public-house possesses attractions too strong for denial. I do not overlook the fact that drink wrecks many a fair home, and drives its victims on economic and moral grounds to dwell in dens. But it is clearly the duty of the State to provide an environment for its members compatible with health and morality. Evidence is rapidly accumulating which goes far to show that it is impossible to provide adequate sanitary dwellings for the people at rentals within their resources; and it will be impossible

to suppress slums and prevent overcrowding, with the attendant evil of intemperance and physical and moral degeneration so long as there is anything like the now-existing private monopoly in land.

Garden cities are the ideal of many reformers, an ideal which should be kept before local authorities in the extension of towns and cities. Streets should be wide and planted with trees, and parks, playgrounds, swimming baths and gymnasia should be provided for all; even the humblest cottage should have its bathroom, its electric light, its wholesome and abundant water-supply, and its strip of garden. These things, together with schools, colleges, hospitals, libraries, art galleries, lectures, concerts, etc., should form part of municipal enterprise and governance. For reasons which I shall give presently I would exclude liquor shops from municipal provision and management, and in their place establish adequate substitutes, municipal recreation rooms, where billiards, chess, draughts, etc., could be indulged in, and all kind of refreshment free from alcoholic taint might be had for money down. The spiritual needs of the people belong to the churches.

I shall be told that this is Socialism, pure and undefiled. Be that as it may, it is certain that human physiology demands such reforms, and Divine philosophy approves them.

Social life in our villages requires to be lifted from the stagnant slough of indifference and neglect. Allotments of land should be on a big enough basis to offer an honourable and independent career and inducement for the people to remain on the land. Land reform is essential to temperance reform, and both to the bodily health and mental and moral well-being of the nation.[1]

[1] The Housing of the Working Classes Act, 1890 and 1900. The Small Holdings Act, 1892.

Conditions of labour cannot be ignored in the discussion of intemperance. The longer the hours of employment, the more monotonous and the more precarious the work, the closer and more poisonous the atmosphere, the smaller the wages, and the keener the struggle for existence, the greater will be the inducement to drink. Whatever tends to reduce the standard of life, and whatever injures man's self-respect and sense of independence, must tend to increase the craving for artificial excitement and alcoholic intoxication. Factory legislation and sanitary reforms have most assuredly aided the cause of sobriety, and every hygienic improvement will lessen the influence of alcohol upon the community. Shorter hours, especially in arduous, hazardous and unhealthy occupations, compensation for accidents, old age pensions and similar social reforms are bound to raise the dignity, the independence and the laudable ambition of the working classes, and thereby loosen the hold which drink now has over them. The lower we go in the social scale, the fiercer the fight for daily bread, and the nearer one gets to the submerged tenth—to those without hope in this world or the next—the feebler are the powers of resistance to drink and vice and crime. How careful, how insistent, how inspired should the guardians of the people be to do everything possible to lighten the load of the weary and heavy-laden, to cheapen food, to remove taxes from the necessaries of life, to lower rents, to suppress sweating and to secure in national and municipal workshops and offices model hygienic conditions of labour.

Although Parliament may not be able directly to reduce poverty by raising wages, it can in the several ways I have mentioned lighten the lot of the poverty-stricken and destitute, remove the sting of the poor-law system from the aged, and by farm colonies—especially on Crown land—by afforestation, by reclamation of forest lands, by

breaking down the monopoly in land, and by other wise and productive measures seek to solve the problems of poverty and unemployment, and, at the same time find some solution for the drink problem, with which both are intimately associated.[1]

Regulation of the public-house.—It is estimated that nine-tenths of the public-houses are in the hands of brewers and brewery companies, who compel their tenants to take all their liquor from them. This pernicious system of "tied houses" puts a premium on inferior brands and on adulteration. To what extent adulteration is carried on it is impossible to say. An important point is made by some people that adulteration is the cause of much intemperance, and there is no doubt that the addition of "the higher alcohols," fusel oil and the like, considerably increases the intoxicating effect of drink. At the same time it is a profound mistake to overlook or to minimise the simple truth that ordinary ethylic alcohol is the active poison in beer, wine and spirits, and that it alone, without any more noxious agents being added, produces drunkenness and causes disease. All scientific facts and experiments regarding drink are based upon the clearly ascertained physiological action of pure ethylic alcohol. The abolition of the "tied house" system would undoubtedly tend to diminish drunkenness and crime, but it is not so much as a measure of temperance reform, but as a matter of tenant's right and freedom that I would advocate it.

[1] Booth, Charles: "Pauperism and the Endowment of Old Age". London.

Rowntree, S.: "Poverty: A Study in Town Life". London, 1902.

George, Henry: "Progress and Poverty". London.

"Report of the Royal Commission on Housing, 1885."

Repressive and Regulative Measures

Disinterested management.—This much discussed and widely advocated measure for mitigating the evil is thus described in the words of its supporters :—

"The licensing authority shall have power to grant all the licenses to a body of suitable persons who are prepared to undertake their disinterested management under carefully considered statutory conditions".

The statutory conditions include among others that the "suitable persons would only receive a moderate rate of interest on the capital"; that "a first charge upon the profits after paying interest on the capital should be a reserve fund—equal in amount to the capital—to be invested in consols"; that after the suitable persons received their capital back they would then become disinterested managers, and "the surplus profits should go to the national exchequer".[1] To find "suitable persons" in every town and village in the kingdom, who would be willing and would see no dishonour in investing capital in such an enterprise, and who would further be prepared to manage it without profit and gain to themselves, but purely in the financial interest of the State, is certainly to make a big draught upon man's imagination and to place great trust in human benevolence. As an experiment in philanthropy a few suitable persons might be found at first, but to perpetuate the system a popularly elected body would almost inevitably sooner or later have to undertake the management and find the necessary capital. In other words municipalisation would, I believe, be the natural outcome. To say that the leading advocates of this scheme are opposed to municipalisation is no answer to what

[1] "The Option of Disinterested Management" and "Our Present Policy," pamphlets issued by the Temperance Legislative League. 1906.

appears to be the logical evolution. As the scientific objections to disinterested management and to trust companies apply in great measure to municipal management, it is perhaps better to defer their consideration until I come to the larger question. The cloak of respectability thrown over the sale of liquor by disinterested management, trust companies, municipalisation and nationalisation in my opinion forms an insidious and yet very real incentive to the continuance of conditions making for intemperance that are to be deplored in an age of enlightened reform.

Trust companies have been formed under distinguished patronage in the United Kingdom during recent years for the purpose of running licensed premises. The objects of the trusts may be summarised as follows:—

(1) After paying 4 or 5 per cent. interest on the capital invested, and putting aside another 4 or 5 per cent. in redemption of capital, any surplus profits are devoted to counter attractions to public-houses, for instance, the provision of public reading-rooms, libraries, concerts, etc.

(2) To avoid pushing the sales of intoxicating drinks by giving the managers of public-houses conducted under the trust fixed salaries with a commission on the sale of such non-intoxicants as tea, cocoa, mineral waters, etc.[1]

Municipalisation of the retail trade in drink offers, I venture to think, a practical and tempting scheme, which may well fill the rational and farseeing reformer with alarm and dismay. There is much to be said for it, and yet I believe it is fraught with immense possibilities for evil to the moral and physical life of the people. To divert the profits of a trade which enjoys a State-given monopoly from private individuals to public purposes is economically

[1] For the licensing experiments of Lord Grey and the Bishop of Chester, see the annual reports of the companies of which they are the leading promoters.

sound and incontrovertible. If the traffic in alcohol is to be regarded as legitimate trading in a necessity for healthy life, such as water, gas, electric lighting, electric traction and the like, I should be among the first to advocate its municipalisation. But it is not in any way comparable. Instead of its being a necessary and beneficent agent it is at best a peculiarly dangerous luxury. Every man, woman and child can do without it; in fact is better without it. This cannot be urged against the other monopolies mentioned, more particularly water, which next to air ranks amongst the prime essentials to human life, and should on that account never be the sport of private enterprise or private gain. In dealing with the alcohol question this truth cannot be too powerfully emphasised, for the impurity and the inadequacy of our water supplies is too frequently and unfairly alleged as an excuse for drinking intoxicating beverages. Enormous as are the dangers to health arising from an impure or inadequate supply of water, they sink into comparative insignificance beside the permanent danger to the public health arising from the traffic in alcoholic liquors.

High licence is a favourite panacea with many. At present licences are granted for comparatively small annual fees, quite irrespective of their market value. We all know of properties increasing one hundredfold or more in value upon receipt of a licence to sell drink. If the high licence system of the New York State of America, for instance, were introduced into Great Britain and Ireland, the national and local exchequers would reap from fourteen to sixteen millions a year, instead of a paltry two millions as at present. The alternative to municipal drink on the financial side is high licence, which at the same time acts as an undoubted restriction to the number of public-houses.

In discussing any or all of these variously advocated

measures, reformers are apt to forget the real nature of the evil which they are seeking to curtail. Alcohol unfortunately declines to cast its deceptive coat at the command of individual man, municipality or imperial Parliament.

In spite of all legislative experiments the physiological and pathological action of alcohol remains the same. Hence the difficulty of controlling the appetites and passions aroused by drink by any mere artificial system of "management".

In countries which have municipalised the trade in drink it is claimed that police supervision of public-houses has slackened instead of improved, as its promoters promised it would do. Municipal management, it would seem, tends almost inevitably to paralyse the powers of the police.

A not unpowerful plea brought forward in favour of municipalisation is that it will get rid of the political menace of those who claim "our trade is our politics". There are two or three sides to such a plausible proposition. Unless the State or the municipality is going to enter into competition with the brewers and distillers in the manufacture of beer and spirits, the trade as manufacturers and capitalists will still exercise an influence in politics which no municipal advocate can neglect. Further, there is reason to fear that under municipalisation wealthy associations would capture the councils as they have captured other elected bodies. Instead of the political menace being removed by this system, it might be greatly magnified.

One more important argument in favour of municipalisation is that when the retail sale of liquor is handed over to the local authority, Sunday closing, reduction of the hours of sale and reduction in the number of public-houses will follow as the light the day. I admit that I am sceptical about that. Once give the ratepayers a direct interest in the traffic, and then ask them to vote (1)

for reduction of drink-shops with less relief or loss to the rates, or (2) against reduction with relief to the rates, and history will probably repeat itself in the choice between Christ and Barrabas.[1]

The chief issue after all in the proposal to municipalise drink is surely a moral one. Science condemns alcohol as a demoralising agent and as an architect of ruin.

The State and the municipality are not justified in endangering the lives and the happiness and the morals of the citizens, and cannot cater for their frailties and vices without creating a moral Niagara. The nation that defies morals enters on the slippery slope of decay. Its days are numbered.

Nationalisation of the manufacture and retail sale of drink can scarcely claim to exist as a definite proposition before the country at the present time. We can therefore only give it the briefest notice. The pros and cons of municipalisation apply here with differences, the most important of which perhaps is that the direct responsibility and financial interest of the citizen in the management of the traffic is not so easily brought home to him, and in consequence the thraldom of the traffic would not be so easily removed. So overbearing is the consideration of making a thing pay, that little or no reduction in the drinking habits of the nation would be likely to accrue.

About twelve years ago Russia started a government monopoly in spirits and under the pretence of temperance

[1] Gould, E. R. L.: "The Gothenburg System of Liquor Traffic". London.

Pease, E. R.: "Municipal Drink". London, 1904.

Souttar, Robinson: "Alcohol: Its Place and Power in Legislation". London, 1904.

Rowntree, J., and Sherwell, A.: "The Temperance Problem and Social Reform". London, 1900.

Rowntree, J., and Sherwell, A.: "The Taxation of the Liquor Trade," vol. i. London, 1906.

reform, drink-shops were reduced by 100,000, but larger and more attractive ones took their place, the liquor revenue went up several millions per annum, and with it the amount of drunkenness, crime, disease and poverty. In 1904 the Russian Congress of Medical Men met at St. Petersburg to discuss subjects of medical science and national health. It was not a temperance congress, and yet it was driven by facts to pass the following resolutions:—

"The spirit monopoly not only does not check alcoholism in Russia, but it actually favours its growth, because of its value in filling the coffers of the State.

"An active and successful conflict against alcoholism, which is in Russia a social evil of the first magnitude, is only possible if we had full guarantees of liberty for our persons and words, and freedom of the press and public meetings.

"It is only under these conditions that it would be possible to spread widely among the people instruction as to the injury caused by alcoholism, and the real causes of its development."

Although we enjoy representative institutions in Britain, and the banishment of our medical men to Siberia, which happened to some of the Russian doctors for loyalty to truth on the above-mentioned occasion, is impossible, the fate of England, if it adopted nationalisation of the drink trade, would probably be the same so far as intemperance, ill-health, pauperism and crime were concerned.

Popular Control.—From a study of municipal and State monopoly, one naturally passes to the consideration of public control of the liquor traffic. From the time of Edward VI. to 1904, the control of the trade has been entrusted to the local magistrates, who have had power to grant licences for "one year and no longer" and to

refuse the renewal of licences. The Licensing Act of 1904 upset this arrangement and deprived the local magistracy of the power to refuse renewal, leaving this serious question to the decision of Quarter Sessions. What the new Licensing Bill of 1907 will propose I cannot tell, but the Democracy demands effective popular control in some shape or other. This means that some publicly elected body shall be constituted the licensing authority instead of the magistracy, the licensing authority taking its instructions as to policy either from Parliament, or from the local electors, or from both. Whether it ultimately assumes the form of a Committee of the County Council, or Town Council, or Urban District Council, or an *ad hoc* body especially elected to deal with the drink traffic, it is unnecessary for us to speculate upon here. It is, however, all imperative that Parliament should lay down general principles for the clear guidance of the local licensing authority.

On some of the most pressing requirements science speaks with no uncertain voice.

Statutory Limitation of Public-Houses

1. As public-houses are incompatible with public health and public morality, the fewer there are the better for the health, happiness, morals and prosperity of the people. A maximum of drink-shops per head of the population should be fixed by statute with local option for further reduction. Lord Peel's Commission recommended 1 for 750, but that proportion is far behind the requirements of public health. One for 5,000 would be nearer the mark. In England it is 1 for 243 and in Scotland 1 for 360, so little regard have our rulers had in the past for the good of the citizens. Clubs require limitation as well.

2. The hours of sale in public-houses and clubs should

be further restricted by statute, with local option for still further restrictions. For the prevention of the overlaying and death of infants and for the economic salvation of the working-classes early closing on Saturday nights is of paramount importance.

3. Sunday closing[1] in England is necessary to bring that portion of the United Kingdom into line with other members of the union. The health of the public-house servants is a national concern and worthy of consideration.

4. Entire closing on election days is desirable to free our local and national contests from the bias and corruption of beer.

5. Grocers' liquor licences, as affording facilities, especially to women and secret drinking, should also be limited by statute and come within complete control of the local licensing authority. Their total abolition is to be devoutly desired.

6. Science declares above all things that the State must preserve the integrity of its women and children. The employment of women in bars and the serving of children with liquor must therefore be prohibited.

The danger of alcoholism to publicans and bar attendants is written large in the death records. The mischief wrought on the race in this way is bad enough, but in the light of heredity it sinks into comparative insignificance beside the ruin of women and their offspring by the alcoholic environment. To save the children, the women must be saved first.[2] No plea, therefore, of the liberty of the subject or of the rights of parents should come between this paramount duty of the State to the future mothers and citizens.

[1] "Report of the Royal Commission on Sunday Closing, 1890."

[2] Burns, the Rt. Hon. John, M.P.: Inaugural address included in "Report of the Proceedings of the National Conference on Infant Mortality". London, 1906.

The Protection of Children.—The sale of intoxicating liquors to children is a blot upon our fair fame and much-vaunted scientifically directed civilisation. It is on the growing tissues of the child that the action of alcohol is most injurious, and it is in the plasticity of youth that the alcohol habit is most easily engendered. In the protection of her young England stands in the position of a third-rate power. The Sale of Intoxicating Liquors to Children Act of 1901 only punished the publican if it could be proved that he "knowingly" served, or allowed to be served, children under fourteen with intoxicants except in sealed vessels. That is the high-water mark of British care for the children!

Other nations—including some of our colonies—prohibit children entering a public-house up to eighteen and twenty-one years of age, and we should never rest content until we have discharged our duty to the coming race by totally prohibiting the entrance of all persons into public-houses below twenty years of age. The publican who infringes such law should be imprisoned without the option of a fine. Such a provision would probably do more for temperance and national efficiency than all the many Licensing Acts placed on the statute book.[1]

The Principle and Practice of Local Option.—We have left local veto to the last, as it is the most important and the most drastic form of popular control. It is the right of the majority to rule. It is the right of the majority to rule for the greatest good of the greatest number and for the common weal.

Most countries which have put local veto into practice are not satisfied with the bare majority, but require a three-fifths' majority. The greater the majority, the

[1] Webb, Sidney and Beatrice: "The History of Liquor Licensing in England". London, 1903.

"Report of the Royal Commission on Liquor Licensing Laws, 1896."

greater is the likelihood of such prohibition being effective and all illicit selling being effectually checked. From the logical and scientific point of view it is, I venture to think, the most practical means for dealing with alcoholism. Alcohol is the enemy; alcohol must be eliminated. Compromise curtails, never extinguishes. It is idle talking about cultivating moderation, when the affinity of alcohol for the central nervous system is constant even unto death, and when the predisposition towards it is clearly inherited. So long as human nature is what it is there will always be tens of thousands of men and women who cannot resist the allurements of the alcoholic environment and who are bound to become the slaves of alcohol in spite of education, religion and all the restraining forces of society, and who, becoming drink's victims, drag others more or less innocent into the vortex of disease, poverty and crime.

The only practical argument against veto is that a majority vote would not be obtained against drink in the most drink-sodden districts, where prohibition is most needed. Probably this would be so at all events at first, but the exercise of the veto should prove a great educative force, and would stimulate the efforts of temperance organisations and other regenerative agencies, until men and women, who are most enthralled, would vote for their own salvation. Of course the vote should be given to all adults of both sexes, for this is a woman's question as much at least as a man's, if not more so. For the drink-sodden district we have already proposed legislation—limitation of licensed premises per head of the population—that will tend towards cleaner living and clearer thinking, and the ultimate adoption of the veto.[1]

Compensation for the non-renewal of annual licences and its discussion scarcely come within the limits of a

[1] Hansard: "Debate on Local Option Laws in the Colonies and Local Veto Resolution," House of Commons. 10th April, 1906.

scientific work. Medical science, however, could roll up a big catalogue of damage done by alcohol, that would make a counter-claim look ridiculous.

It is now generally admitted that a time-limit to the Compensation Clauses of the 1904 Act must be inserted in the next Licensing Act in common justice to the community.

National prohibition of the manufacture and sale of drink is no doubt the *Ultima Thule*, the final goal, the holy of holies of the thorough-going reformer. It is, however, a far-off ideal to reach which we have a long journey to travel.

How much better the world would be without alcohol God only knows. For our own country no second-sight is needed to foresee a mighty improvement in the lives and homes of the people, in their material prosperity, in their physical efficiency, and in their spiritual beauty. The death-rate would fall, and the hospitals would be relieved of many of their patients, the cry of the little children would be turned to laughter, and the joy of parents would be as the noonday sun. While many of our prisons crumbled away, churches and schools would flourish like the green bay tree. With trade booming, and rates and taxes dwindling, civilisation would be equal to the problems of poverty and able to cope with the difficulties of unemployment and provision for old age. Prostitution and syphilis without the fuel of drink would be shorn of many of their horrors and much of their magnitude, while the black night of lunacy would be reduced by one-half. Private virtues, public morals and national ideas would all participate in the grand ascent through freedom from alcohol. A new heaven and a new earth might not be reached by the banishment of drink, but as a people and as a nation our influence for good in the world would be enormously enhanced, and we should be a long way nearer that great day when there shall be no more curse.

XV

THE ARREST OF ALCOHOLISM

BY

THE EDITOR

The Solution of the Drink Problem

A STUDY of the preceding chapters of this work should have gone far to convince the thoughtful reader that no single and all-embracing solution of the drink problem is at present possible. It is indeed doubtful if we may ever attain to any complete and satisfying deliverance from the bondage of this self-imposed yoke. Man having once discovered the means whereby he may prepare intoxicants, and ,now possessing a desire, often insistent and uncontrollable, for agents which can increase his sense of well-being and add to his perception of sensual pleasure, it seems unlikely that he will be willing readily to abstain wholly from the dangerous product of his ingenuity and applied knowledge. Alcoholism is an evil the first beginnings of which are lost in the mist of prehistoric days; and with human characteristics, propensities and opportunities as they now appear, alcohol will in all probability long continue to maintain the problem which has hitherto baffled the astutest thinkers and resisted the attacks of the most energetic reformers.

The drink problem in its manifold ramifications is intimately interwoven with the many ills which oppose

and impede human progress. It is indissolubly connected with not a few forms of moral wrong, with much of mental deficiency and bodily enfeeblement, and a great measure of our social disabilities. From the use of alcohol arise many of the morbid manifestations which we group under the numerous headings of individual and collective depravity. Alcoholism is, in fact, both cause and effect of considerable physical incompetence and far-reaching psychological derangement.

In short, alcoholism is either primarily or secondarily ætiologically connected with most, if not almost all of the perplexities which are encountered in the tangled web of the life of to-day. Directly, or by its concomitants and consequences, alcoholism is answerable for an immense and altogether incalculable measure of personal suffering, domestic misery and national loss. It is therefore clear that while we speak of the "Drink Problem," we do not denote thereby an entirely unique and isolated problem to be studied by exceptional methods and requiring the results of researches to be stated in unusual terms.

It is in fact becoming evident that the Drink Problem must be regarded and investigated as but a part of a much more comprehensive and complex problem which deals with man in all his varied and multitudinous medico-sociological aspects. The alcohol question is indeed one to be considered and dealt with by medical investigators and social reformers of every school of thought and enterprise, but throughout the spirit and methods of science must direct.

The Scientific Basis of Temperance Reform

Thomas de Quincey more than sixty years ago, when that branch of social reform, which we conveniently designate "The Temperance Movement" was comparatively in its infancy, wrote of it as "the most remarkable instance

of a combined movement in society which history perhaps will be summoned to notice". The progress of this awakening has been little less than phenomenal.[1] The rough and ready methods of the pioneer have cleared the ground of many encumbrances. Evidence bearing on the subject has been rapidly accumulating, and observers and investigators in all parts of the globe are presenting valuable contributions to the comprehensive study of the drink problem.[2] At a time when the visionary and the materialist, the faddist and the pessimist, and the specialist of every school are adding to the babel of advisers, it is essential that the rational reformer should be content to progress slowly if he would advance surely. Only by patience, self-restraint and a thorough scientific appreciation of the relative value of ways and means to desired ends can large and permanent results be attained. While the greatest possible freedom should be allowed to all reasonable attempts at experimental reform, and every excursion into a new field of investigation should be accorded encouragement and untrammelled opportunities, it is most desirable to restrain a futile playing with grave issues and to prevent the introduction of any measures which may stand in the way of further advance.

The principles of hygiene as applied to the maintenance of healthy life are now being extended to the management of those who are suffering from a departure from the normal. Such a line of therapeutic action, together with the results of modern experiment and recent experience re-

[1] For convenient list of English periodical literature see Edwards, Walter N.: "The Temperance Compendium". London, 1906. Consult also Thorp, F.: "Continental Periodical Literature on Alcohol". *The British Journal of Inebriety*, January, 1906.

[2] For useful expression of French scientific opinion with many references see: Triboulet, H.; Matthieu, F.; Mignot, R.: "Traité de L'Alcoolisme". Paris, 1905.

garding the pharmacological and pathological action of alcohol, is doing much to restrict the employment of alcohol as a desirable and safe medicament. It does not come within the province of this work to discuss the place of alcohol as a drug, but it is necessary to state that a narcotic possessing the possibilities of initiating habits and methods of life which may be productive of infinite evil, should never be self-administered and must only be employed as a therapeutic agent under scientifically directed medical supervision.[1]

Rational Prophylaxis

It is generally admitted that "the future of medicine rests far more in hygiene than in therapeutics,"[2] and in all forms of medico-sociological reform the truth of the old saying that "prevention is better than cure" is being recognised as scientifically correct and affording a reliable guide to effective action. This is conspicuously the case in regard to alcoholism. To arrest the established alcoholic in his devolution is a task often stupendous in its almost insuperable difficulties, requiring unremitting care, inexhaustible patience and an expenditure of time and money, which judged by merely apparent results seems unjustified, and in the view of many is an undesirable interference with the beneficent exercise of natural law whereby the unfit works out his own elimination.

To prevent a lapse into alcoholism with all its attendant disasters is to carry out an action of the highest hygienic value both for the individual and the State.

Rational prophylaxis requires to be scientifically applied at every period of human existence. First and fore-

[1] See "Alcohol Number" of *The Practitioner*. London, 1902.

[2] Metchinkoff, Elie: "The New Hygiene". London, 1906.

most the period of pre-natal life demands protection.[1] During this stage of its development the unfolding life should be safeguarded from the access of all toxic and other deranging influences.

The growing alcoholism among women makes this question one of national importance and indeed touches the very fount of racial existence. The report of the recent Inter-Departmental Committee on National Deterioration very clearly defines this threatening danger:—

"The tendency of the evidence was to show that drinking habits among the women of the working classes are certainly growing, with consequences extremely prejudicial to the care of the offspring, not to speak of the possibility of children being born permanently disabled."

Child life urgently calls for protection from the evils incident to our drinking customs. The coming race is being brought up in an alcoholic environment which makes the maintenance of adequate preventive measures extremely difficult.

Parents are slow to realise that to certain temperaments and to nervously constituted children even the smallest amount of alcohol may arouse inclinations and weaken inhibitory powers which may ultimately plunge their offspring into habits of dangerous indulgence.

Parents and teachers would do well to pay heed to Dr. Clouston's words[2] relating to the pernicious practice of providing beer for schoolboys: "I unhesitatingly condemn

[1] In regard to this matter consult:—

Ballantyne, J. W.: "Ante-Natal Causes of Infantile Mortality, including Parental Alcoholism". Report of the Proceedings of the National Conference on Infantile Mortality. Westminster, 1906.

Barlow, Sir Thomas: "The Prevailing Intemperance Among Women: Its Cause and its Remedy". London.

Rutherford, V. H.: "Alcohol and Maternity". London.

[2] Clouston, T. S.; "The Hygiene of Mind". London, 1906.

this practice out and out as being bad for the growing brain at this period, and attended by many future dangers. Beer is not really a food in any proper sense, and it is certainly an unsuitable stimulant for this stage of life. It creates a taste for stronger liquors, too."

The opinion of the experienced physician to Rugby School, Dr. Clement Dukes[1] also deserves serious consideration: "Alcohol I believe to be unnecessary for boys, and I should like to see it, as is gradually coming to pass, less and less used as an ordinary article of diet. The animal propensities of boys are quite sufficiently active without the stimulating effect of alcohol, and they are always ready enough for sleep without its sedative action. . . . To enable boys to abandon this needless drink, it is essential that parents and physicians should co-operate with masters. . . . I have never yet found cause to sanction the use of alcohol as an article of diet for boys in health."

In not a few girls' schools there is good reason to believe that alcohol in some of its most insidious forms is forging fetters which may make for permanent enslavement.

Many a mature worker honestly believes that alcohol is a helpful agent to him in his mental toil or manual labour. Dr. W. C. Sullivan[2] has ably dealt with the problem of industrial drinking and has clearly shown the desirability for a statutory limitation of the hour of the opening of licensed houses: "The greater prevalence of industrial drinking in London as compared with the provinces, and in the latter as compared with Scotland, is probably in a great measure due to the fact that beyond

[1] Dukes, Clement: "Health at School". Fourth edition, p. 203. London, 1905. See also "On the Impropriety of the Use of Alcohol in Schools". London.

[2] Sullivan, W. C.: "Alcoholism: A Chapter in Social Pathology". London, 1906.

the Border the public-houses are not accessible till 8 A.M., while in the British provinces they open at 6 A.M., and in the Metropolis at 5 A.M."

A rapidly increasing number of those engaged in intellectual pursuits are realising the necessity of rigorously curtailing or even entirely abstaining from alcohol while engaged in brain work.[1]

All having any doubts on this matter should refer to the results of modern psychometric researches by Kraepelin and his followers on the effects of alcohol on brain reactions.[2]

Even the generally accepted view that alcohol was desirable if not almost necessary in old age, an opinion embodied in the aphorism "Wein ist die Milch der Greise," is now being revised in the light of modern scientific research, and even such an authority on the hygiene of advanced life as Sir Hermann Weber[3] has declared that this old-time claim is "a great and dangerous fallacy".

At every period of life's progress from dawn to sunset, science affirms that there is the greatest need to exercise a wise prophylaxis against the insidious devoluting influence of alcohol.

The Restoration of the Alcoholic

The redemption of the inebriate is a task calling for the exercise of the highest graces and the application of many means and widely differing measures. The rational

[1] For an interesting collection of individual experience on this point see Reade, A. A.: "Study and Stimulants". London, 1883.

[2] See Neild, Theodore: "Psychometric Tests on the Action of Alcohol". *The British Journal of Inebriety*, October, 1903.

[3] Weber, Sir Hermann; "Alcohol and Old Age". *The British Journal of Inebriety*, October, 1906.

treatment of the disorder must be based on a sound knowledge of its pathology. Many expend time and energy in a quest for what they term "a substitute" for alcohol, altogether disregardful that any agent which exercises a similar influence must of necessity be equally baneful.

The wise reformer will avail himself of the expulsive force of every legitimate motive and should be apt to apply the conquering influence of each laudable emotion and true affection. The outlook must be of the widest, the analysis of the deepest, and the practical conclusions comprehensive and all-concluding.

Incalculable harm and infinite loss accrue from a blind experimenting with empirical and quackish measures. It does not come within the purpose of this work to deal with the treatment of inebriety. That is a matter which must be left to skilled medical care and experienced nursing. It is necessary, however, to add a word of warning against the many much advertised nostrums and so-called "cures" which are being foisted on to an unscientific and patent-medicine loving public.

Inebriety brings such dire effects upon the drinker, and such far-reaching disgrace and disaster upon relatives and friends, that it is perhaps not to be wondered at that even the most judicious and discriminating of advisers and the most rational of reformers are sometimes sorely tempted to resort to agencies which cannot be supported by science or approved by strict ethical standards. It is occasionally urged by superficial thinkers and inexperienced workers that in the treatment of inebriety "the end justifies the means". In the management of such a morbid condition it cannot be too strongly stated that such a conception is fraught with danger for the individual, and must oppose anything like effective progress.

It is much to be regretted that many of the loudly lauded "cures" for intemperance are being patronised and pub-

licly supported by ignorant although well-meaning and philanthropically inclined persons. It is lamentable that "commercial frauds," as H.M. Inspector of Retreats designates most of these patent remedies for drunkenness, should be encouraged in the name of humanity and religion, and advocated by those who, if not altogether altruistic, are recognised and respected as leaders of thought, and trusted as reliable guides. It is clear that all such stand in need of thorough instruction, not only respecting the nature of inebriety and the characteristics of the inebriate, but also regarding the true aims of preventive, restorative and alleviative measures and methods.

It is generally recognised that any form of treatment in which the "occult," the "supernatural," or anything secret and mysterious, is allowed to play a dominant part in so "neurotic" an affection as inebriety, often succeeds, or appears to succeed, at least for a time, while the "suggestive" influence remains as a controlling or modifying force.

It is therefore well for the rational therapeutist to avail himself of every means which can be honestly and righteously applied. Of this we may be sure that what is scientifically right cannot be ethically wrong.

Hypnotism has been employed in the arrest of inebriety with some small measure of success.[1] When undertaken by an experienced and conscientious physician, hypnotism may be admitted to rank as a justifiable form of treatment. In the hands of the ignorant and unscrupulous its use is fraught with danger. The experience of so scientific an investigator as Dr. Milne Bramwell[2] goes far to show that

[1] Tuckey, C. L.: "The Position of Hypnotic Treatment in the Cure of Chronic Alcoholism". *The British Journal of Inebriety*, p. 268, April, 1904.

[2] Bramwell, J. Milne: "Hypnotism: Its History, Practice and Theory". Second edition. London, 1906.

hypnotism, while of real service in some few cases, in many instances proves of but temporary benefit.

This reference to agencies for the uplifting of the drink-victim would be sadly incomplete without a very definite acknowledgment of the incalculable assistance which the wise worker and unprejudiced physician may obtain by bringing to bear on the whole life of the patient that Power, the majesty and mystery, the consolation and inspiration of which it is the mission of religion to reveal.

The Care and Control of the Inebriate

With the coming of fuller knowledge regarding the pathology of inebriety and a clearer recognition of the characteristics of the inebriate, we are realising the urgency of the necessity to provide legislative powers whereby not only the inebriate may be rationally cared for and reasonably controlled, but the interests of his family and friends protected and injury and loss to the State as far as possible prevented or mitigated.

Almost every civilised community has been driven to adopt procedures whereby it can protect itself from the evils incident to the presence of the inebriate.

Dr. Welsh Branthwaite[1] has conveniently grouped the legal measures which have been employed under the following heads:—

(1) *Penal.*—Measures regulating the punishment of occasional or habitual drunkenness by fine or by short terms of imprisonment.

(2) *Control* in penal establishments for lengthened periods.

[1] "A Collection of British, Colonial and Foreign Statutes relating to the Penal and Reformatory Treatment of Habitual Inebriates. Being a Supplement to the Report of the Inspector under the Inebriates Acts for the year 1901." London, 1902.

(3) *Interdiction.*—Laws prohibiting the sale of liquor to persons who are known inebriates.

(4) *Guardianship.*—Acts regulating the appointment of some person or persons to act as guardian or guardians, who may be endowed with legal power over the person, and over the estate of an inebriate.

(5) *Control* in special institutions with a view to reformatory treatment:—

(*a*) For the inebriate who makes voluntary application for admission.

(*b*) By compulsory seclusion for the inebriate who refuses consent to treatment, and yet manages to keep out of the reach of the law.

(*c*) For the inebriate who is a police-court recidivist, or who has committed crime caused, or contributed to, by drink.

English legislation for the protection and provision of the inebriate has been extremely meagre and to a great extent experimental. Since Mr. Dalrymple in 1870 first raised the matter in Parliament but slow progress has been made. It is unnecessary here to enter into a study of the earlier efforts which finally in 1879 bore fruit in the Habitual Drunkards' Act. This, after ten years' trial, although so limited in its range and difficult in its application, was seen to be a step in the right direction, and by the Inebriates' Act, 1888, it was made a permanent measure. After ten more years' quiet agitation the Inebriates' Act, 1898 (61 and 62 Vict., c. 60) was secured, which provided for the establishment of inebriate reformatories and modified considerably the Habitual Drunkards' Acts of 1879 and 1888, which only allowed of the detention of an inebriate in a retreat on his own voluntary application. The Act also provided means for dealing with (1) criminal habitual drunkards guilty of

crime, and (2) criminal habitual drunkards four times convicted of drunkenness.

Even with the limited powers provided by these measures incalculable good has been accomplished for the few, and an education in the importance of legislation for the inebriate provided for the many.

Retreats for Inebriates.—"A Retreat is an institution established for the treatment of persons who are habitual inebriates and willing to submit to control for the purpose of reformation. It is established under the act of 1879, and subsequently amended, and may be managed by any suitable person or body of persons. Before any patient can be legally detained therein, a licence must be obtained; but this can be acquired (after certain formalities have been complied with) from the county or borough council having jurisdiction over the district within which the retreat is situate. The licence gives permission to some person, as licensee, to use a specified building for the purposes of a retreat. When such licence has been granted, the licensee may receive and detain in the building any person who requests admission in the manner prescribed by the Act." A retreat differs fundamentally from a reformatory. The former is intended for the care of patients who voluntarily apply for admission, while the latter is for those who are sentenced to detention therein from Courts of Justice. There are now twenty duly licensed retreats providing accommodation for 554 patients. Only some seven of these are proprietary, the rest being managed by temperance or religious bodies on a philanthropic basis. Under present legal restrictions, it is difficult for retreat work to make much progress. Viewed from the therapeutic as well as the social standpoint, it is almost hopeless to expect any very encouraging results when the initiation of treatment depends upon the consent of the inebriate.

Therapeutic seclusion with rational management and strict medical supervision undoubtedly accomplishes much in many cases. The difficulties and disabilities at present connected with retreat work are very great. Many of the establishments are old-fashioned, overcrowded and lacking in scientifically directed control.[1] Oftentimes cases "certified under the Acts" are permitted to mix in the same retreat with uncertified cases, a procedure which, to say the least, is undesirable.

For the conduct of successful treatment the acquiescence of the patient is no doubt most desirable, but this, in the very cases most requiring control, often cannot be obtained. An extension of legal means for dealing with such patients is urgently needed. It should be remembered that many inebriates can only be induced to enter a retreat when financial and social stress have exercised coercive force. At the present time more than 80 per cent. of all patients in retreats are being paid for by friends or relatives. It will thus be seen at once that the penniless inebriate and his poverty-stricken friends are compelled to place the

[1] A list of all retreats under licence and officially inspected will be found in The Annual Reports of the Inspector under the Inebriates' Acts. London: Wyman & Sons.

A convenient "List of Homes for Inebriates" is issued by the Friends' Temperance Union (secretary, Frank Dymond, 15 Devonshire Street, London, E.C.).

"The Classified List of Child-Saving Institutions certified by Government or connected with the Reformatory and Refuge Union or Children's Aid Society for 1906" (London: Reformatory and Refuge Union, 32 Charing Cross, S.W.); and "The Annual Charities Register and Digest" (London: Charity Organisation Society, 1906) contains classified lists of institutions for inebriates in the United Kingdom.

"The Medical Annual," Bristol, also gives a fairly complete list of retreats.

Much care and discrimination is required in the selection of a suitable institution, and patients and their friends would do well always to be guided in their choice by medical opinion.

sufferer in an institution which, from the circumstances of the case, must be limited in its opportunities and unable to supply that open-air life and hygienically directed existence so desirable for the redemption of the alcoholic victim.

The majority of inebriates are still permitted to labour for their own degradation and ultimate elimination, but this oftentimes slow process brings financial and moral disaster and incalculable suffering to relatives and friends, and in only too many instances an actual multiplication of individual misery.

Certified Inebriate Reformatories.—The first and second sections of the Inebriates' Act of 1898 provided powers whereby two classes of inebriates may be committed to detention for the purpose of control and reformation: (1) Inebriates convicted on indictment of crime caused or contributed to by drink (Section I); (2) inebriates convicted, summarily or on indictment of drunkenness, or of certain other certified offences of which drunkenness forms a part, and who within the year preceding the offence have been thrice convicted summarily of similar offences (Section II).

"Section I" cases (criminal inebriates) may be sentenced direct to a State reformatory, or sent to any certified reformatory, the managers of which are willing to receive them. These cases cannot be dealt with in police courts, but must be sent on indictment for trial at quarter sessions or assizes.

"Section II" cases (police-court recidivists) can only be committed to a certified reformatory. The Secretary of State has power to transfer any case from a certified to a State reformatory when this course seems to him to be desirable. Any person convicted under Section II, who consents to summary procedure, may be sentenced to reformatory detention direct from the police courts. If, however, the prisoner refuses to be dealt with at that

court, indictment for trial at the quarter sessions or assizes is necessary before a committal order can be made.

Slowly but surely progress is being made in the treatment of inebriates by these reformatories, as will be seen from the following tabular statement taken from the last official report of H.M. Inspector of Retreats:—

Year.	Number of reformatories.	Number of beds certified.	Number of cases admitted.			Under detention at end of each year.	Discharged on licence or otherwise absent.	Total committals up to end of each year.
			Male.	Female.	Total.			
1899	4	227	—	88	88	87	1	88
1900	5	416	16	128	144	182	30	232
1901	6	478	35	169	204	288	148	436
1902	8	624	46	232	278	419	295	714
1903	9	677	39	259	298	579	433	1012
1904	11	1073	38	380	418	803	627	1430
1905	11	1251	91	352	443	970	903	1873

State Inebriate Reformatories may be established by the Secretary of State according to the provisions of the Inebriates' Act of 1898, from moneys provided by Parliament, and he may issue regulations for their management, provided that no regulation shall authorise the infliction of corporal punishment.

Before the establishment of these institutions it is interesting to note that "of all persons committed for reformatory treatment, from 10 to 15 per cent. proved too refractory for detention under any conditions short of the strictest measures, such for instance as are found necessary to ensure safe custody and the maintenance of discipline in prisons". State reformatories now exist at Aylesbury and Warwick. These institutions are an absolute necessity for the protection of the community.

Our legislators and the general public are slow to

realise the true characteristics of the "habitual drunkard" at present under treatment in Certified Inebriate Reformatories. Attention needs to be drawn to the terrible facts as stated in the last Report of H.M. Inspector: "It will be well to bear in mind three very important points —first, that all cases, in addition to actual drunkenness, have been convicted over and over again of offences resulting from their habits, such as disorderly conduct, assault, wilful damage, theft, attempted suicide, or neglect of children; secondly, that, with few exceptions, all have been sent to and fro between police court and prison for many years as ordinary offenders before being specially dealt with as inebriates; and thirdly, that, up to the present, the importance of affording drunkards an early enough chance of reformation has not been sufficiently realised. Under these circumstances it will scarcely be surprising to find that many committals are in the lowest possible state of unimprovable degradation, and that it has become necessary to set apart some of our institutions as little better than moral refuse heaps, for the detention of the hopelessly defective, at the lowest possible cost to the country."

Upwards of 62 per cent. of the inmates of inebriate reformatories are found to be insane, or defective in varying degree. Mental incompetence is a fruitful cause of habitual drunkenness. Bearing on this point it is well to note the opinion of Dr. F. W. Mott, pathologist to the London County Council, that "a relatively small quantity of alcohol to the feeble-minded, epileptic, and potentially insane, whether the results of inherent or acquired brain defect, acts as a poison and renders him anti-social". In dealing with the relation of alcohol to insanity, he further expresses the opinion that "the majority of people admitted to asylums are hereditarily predisposed to insanity or are of a neurotic temperament, so that

a quantity of alcohol which might be consumed daily by a man of stable mental organisation without producing mental symptoms is sufficient to cause insanity in such predisposed persons".[1]

The experience of medical officers of inebriate reformatories shows that "a marked intolerance to the action of alcohol is present in both refractory and quiet classes of defectives, very small quantities of drink, no more than is taken daily without apparent physiological effect by an ordinary individual, being sufficient to cause disorderly and violent behaviour".

Accepting as we must such fully established facts as these, it does not require much thought or exceptional judgment to see that our present methods of dealing with the habitual drunkard are unscientific, useless and inhuman as regards the afflicted inebriate, unjust and cruel to his family and inimical to the best interests of the community.

The present situation is well summarised by Dr. Welsh Branthwaite, H.M. Inspector under the Inebriates' Acts: and as the serious conclusions of a responsible Government officer and scientific medical expert they demand the most thorough consideration: "(1) That the majority of persons who have been sent to reformatories are suffering from obvious and sometimes extreme mental defect. (2) That the defect in question is mainly due to congenital weakness, which, possibly only just evident at the start of life, has been intensified by various influences, and supplemented by degenerative changes, until it has become permanently unimprovable. (3) That the increase of original defect and the addition of brain degeneration are

[1] Mott, F. W.: "Alcohol and Insanity: The Effects of Alcohol on the Body and Mind as shown by Asylum and Hospital Experience in the Wards and Post-mortem Room". Reprinted from *The Journal of Mental Science*, October, 1906, p. 30. London, 1906.

due to long-continued drunkenness, practically unrestrained and to the oft-repeated abrupt stoppage of liquor resulting from innumerable arrests and imprisonments. (4) That the committal of habitual drunkards to prison has proved *useless*, in that it has failed to cure, deter, or afford protection to the community; and *inhumane* because it leads to moral degradation, causes or increases mental defect, and removes all hope of reformation. (5) That the only chance of reformation for habitual drunkards depends upon their early committal to special medical treatment, and avoidance of that previous prison routine to which all cases have been subjected hitherto. (6) That chronic drunken recidivists, who have become mentally defective, irreformable and hopeless, should be committed to reformatories for full terms, and recommitted thereto as often as necessary, so that detention may be continuous, or as near continuous as the law permits; continuous detention being justifiable on account of helpless conditions, danger to the community, and the constant charge such persons are upon public funds."

In view of the above facts and much other evidence that might be presented if space would allow, it will be seen that there is undoubtedly urgent need for amendment of the law relating to the detention and care of alcoholic inebriates, and considerable extension of our present legislative powers if we would deal effectively with these unfortunate delinquents and deficients.

Considerable attention has recently been drawn to this most important matter. An Inebriates' Amendment Bill for Scotland has been drafted.[1]

The British Medical Association, through the Lunacy

[1] This Draft Bill has been prepared under the direction of the Town Clerks of Glasgow and Dundee and the County Clerk of Lanarkshire, and should be carefully studied by all interested in the amendment of the Inebriates' Acts, 1879 to 1900, in their application to Scotland.

Sub-Committee of its Medico-Political Committee, has devoted careful study to this matter, and has not only published a statement of the grounds on which further legislation is necessary, but has also furnished recommendations as to the path along which legislative advance may be reasonably made. We consider these so important that we here reproduce the exact text:—

"(A) CONSIDERATIONS AS TO THE NECESSITY FOR LEGISLATION

"1. From the considerations placed before the Sub-Committee, it appears to be clearly established that there are in all classes of society persons who are, by indulgence to excess in intoxicating liquor, or in the use of stimulant, sedative or narcotic drugs or substances:—

"(*a*) At times incapacitated from performing their duties to themselves, their families, or the State; and,

"(*b*) By the same cause, at times rendered dangerous or offensive to themselves, their families, or the public.

"2. The number of such persons is sufficiently great, and their conduct, in consequence of excessive indulgence in alcohol, etc., as aforesaid, is sufficiently noxious, to render it desirable that there should be means of restraining them from such excessive indulgence;

"3. It is found by long and frequent experience that no means, except compulsory deprivation of the alcohol or drug, is efficient in restraining such persons from their excessive indulgence;

"4. There is at present no legal power by which such persons can be subjected to compulsory deprivation of alcohol unless they themselves so desire, or unless they have been repeatedly convicted of offences, and no legal power by which the takers of drugs in excess can under any circumstances be subjected to compulsory deprivation of such drug;

"5. In the opinion of the Sub-Committee, there is urgent need that legislation should be provided, by which such persons could be placed under suitable control, and restrained from excessive indulgence in alcohol, or drugs, as the case may be, whether they are willing to be so controlled or no, and whether or no they have been convicted of an offence;

"6. The Sub-Committee recognises the gravity of a recommendation which, if carried into effect, will authorise the deprivation of some of the liberty of persons who may have committed no crime or offence recognised by the law; and would include in its recommendation safeguards against the improper application of the powers that they desire to be created. It is of opinion that efficient safeguards may be constituted in two ways, *viz.*, first, by requiring the consent of a judicial authority before any person can be restrained for such cause as is herein indicated; and, second, by giving power to such judicial authority to give costs against any applicant for a detention order whose application ought not, in the opinion of the judicial authority, to have been made.

"(B) RECOMMENDATIONS

"*Persons to be placed under Restraint*

"1. Subject to the safeguards stated in Paragraph 6 of Part (A) of this report, the Sub-Committee is of opinion that powers should be given to a judicial authority to place under restraint, in spite of his own objection thereto, any person who is so addicted to the habitual use of alcohol or opium, or any stimulant, sedative, or narcotic drug or substance as

"(*a*) To render him at times dangerous to himself or others;

"(*b*) To render him at times incapable of managing himself or his affairs.

"*Form of Restraint*

"2. If in the opinion of a judicial authority, any person comes within the description of the last paragraph, then the judicial authority should have power to order that such person be committed for any period not exceeding three years to the custody of (*a*) any person named in the order willing to act as guardian; or (*b*) the managers of any licensed retreat or inebriate reformatory who are willing to receive him. When any person is admitted to a retreat or reformatory under these circumstances, all conditions shall apply as if he had been admitted to a retreat or reformatory under the Inebriates' Acts, 1879 to 1900. Power should be given to the Secretary of State to transfer the inebriate from the control of any guardian in whose charge he may be placed under order of Court:—

"(1) If the person in whose charge he was so placed declines to continue his responsibility or become incapable of properly exercising it;

"(2) If the inebriate cannot be restrained from the use of alcohol or other substance as aforesaid.

"Such power of transfer should include power to transfer the inebriate from the charge of the guardian to a licensed retreat or inebriate reformatory, or from a retreat to a reformatory, or from one retreat or reformatory to another.

"*Power to deal with Estates*

"3. Power should also be provided to deal with the estates of persons who are, by indulgence to excess in alcohol or drugs, at times incapable of administering their estates with ordinary prudence.

"*Procedure*

"4. In the opinion of the Sub-Committee the following matters should be provided for in any measure that deals with the persons under consideration:—

"(A) The judicial authority should be set in motion by petition.

"(B) The provision as to the person by whom the petition is to be presented should be analogous to that contained in Section 5, Sub-section (1), of the Lunacy Act, 1890.

"(C) The petition should be supported by affidavits or by documents having the force of documents made on oath.

"(D) The judicial authority should have power—

"(*a*) To visit or cause to be brought before him the person whose conduct is in question.

"(*b*) To make such further inquiries and summon such witnesses, including the husband or wife of the person complained of, as he may think necessary.

"(*c*) To adjourn the inquiry.

"(*d*) To make an order for the immediate committal of the person as herein before suggested.

"(*e*) To make an order for the committal of the patient at any time within months of the date of the order, contingent on the behaviour of the patient and at the discretion of the petitioner.

"(*f*) To dismiss the petition without or with costs against the petitioner, according as, in the opinion of the judicial authority, the petitioner has, or has not, acted in good faith, and without malice.

"(*g*) To make a maintenance order on the estate of the inebriate, or to require guarantee that maintenance expenses shall be met.

"(E) Protection should be afforded to all persons who have in good faith and with reasonable care done anything purporting to be done under the legislation proposed."

There is urgent need for an improvement and extension in present measures, whereby it is sought to exercise an effective "after care". It is wise to remember that at least potentially "an inebriate once, an inebriate ever".

The Rôle of Legislation in the Prevention and Arrest of Alcoholism

The State has ever reserved the right to interfere with the liquor traffic, to regulate the manufacture and sale of intoxicating drinks, to raise revenue from the same by definite taxation, and generally to exercise a controlling influence by the licensing of those engaged in the trade and the punishment of those who offend their country's laws through excessive indulgence in alcoholic drinks.

From a study of the preceding chapters of this work it will be seen that the reformer and statesman have need ever to bear in mind that the evil of alcoholism is essentially dependent on the presence in all forms of intoxicating liquors, be they spirits, wines or beers, the products of the distiller, or wine grower, or brewer, of a definite toxic body. It is true that the poisonous action of this agent may be increased and in a measure modified by the presence of adulterations and contaminations, but the chief deleterious action of all intoxicating drinks is dependent on ethylic alcohol, and it is because of the presence of this chemical body, with its characteristic action on the human subject, that most drinkers imbibe what is admittedly an agent having dangerous toxic properties.

An attempt has also been made to show that any satisfactory constructive legislation must recognise the different factors in man's constitution acting as ætiological influences predisposing him to a ready descent into intemperance, or giving him a proclivity, if it may be so expressed, to the maintenance of sobriety.

It is also of great importance to bear in mind the

important place which the public-house at present occupies in the common life of the nation, and the personal habits of large numbers of the individual units of the people.

The relation of the public-house to the psychology of its frequenters and the hygiene of the community, requires careful consideration if legislation is to advance in accordance with scientific knowledge.

The indissoluble association of alcoholism with other evils must ever be borne in mind. This is insisted upon in the Report of the Inter-Departmental Committee on Physical Deterioration:—

"Next to the urbanisation of the people, and intimately associated with it as the outcome of many of the conditions it creates, the question of 'drink' occupies a prominent place among the causes of degeneration. The close connection between a craving for drink and bad housing, bad feeding, a polluted and depressing atmosphere, long hours of work in overheated and often ill-ventilated rooms, only relieved by the excitements of town life, is too self-evident to need demonstration, nor unfortunately is the extent of the evil more open to dispute."[1]

The Report, while indicating the necessity of employing nationally applied educational effort, recognises the powerful aid which wisely ordered legislation may afford:—

"The Committee believe that more may be done to check the degeneration resulting from 'drink' by bringing home to men and women the fatal effects of alcohol on physical efficiency than by expatiating on the moral wickedness of drinking. To this end they advocate the systematic, practical training of teachers to enable them to give rational instruction in schools on the laws of health, including the demonstration of the physical evils caused by drinking. At the same time, the Committee

[1] Report of the Inter-Departmental Committee on Physical Deterioration, vol. i., p. 30, par. 160. London, 1904.

cannot lose sight of the enormous improvement which has been effected in some countries, and might be effected in this country, by wise legislation and their provisions extended."[1]

There seems no reason to doubt but that, with the growth of large centres of population, the urbanisation of the habits and manner of life of the people, the growing stress and strain of conditions of every form of labour, the rapidly multiplying influences making for mental instability and moral laxity, we are developing characteristics which individually and nationally make us one and all more predisposed to succumb to the allurements of alcohol and certainly render us more susceptible to its toxic action.

It does not come within the scope of this work to deal in detail with the many schemes which would-be reformers are urging as desirable features for legislative enactments. To all thoughtful minds it is abundantly clear that the time is ripe for a thorough revision not only of what we may call prophylactic legislation, means whereby the manufacture and sale may be more strictly guarded, but also of measures whereby the inebriate may be more adequately dealt with. It is most essential that without further loss of time our Inebriates' Acts may be consolidated.

The medical adviser and the student of social progress may well unite in urging the absolute necessity for restricting the promiscuous sale of liquor. The exact nature of the amendments of our licensing laws may well be left to statesmen to formulate. From the point of view of preventive medicine it seems not only rational but most desirable that a community should have the power to regulate, and if needs be to exclude from its midst, the

[1] Report of the Inter-Departmental Committee on Physical Deterioration, vol. i. p. 87. London, 1904.

common sale of so noxious a body as alcohol. This is particularly needed in those centres where the conditions of life render the use of alcoholic drinks most dangerous, and where the allurements surrounding its sale are the greatest. Prohibition here seems a policy of perfection which at present has no chance of application. Thoughtful minds are being driven to the conclusion that, at least for urban communities, some such system as that which well-accredited testimony represents as having produced beneficial results in Norway, Sweden, and Denmark, should be attempted in this country.[1]

Judged from the standpoint of the scientific sanitarian, it certainly seems the height of folly to entrust the monopoly of a drug to those who must of necessity be financially concerned in pushing its sale without regard to the physical, mental and moral ills it produces. As long as the retail sale of alcohol continues it should be effectively supervised, and its sphere of action should be as far as possible rigorously restricted. Much might be attained if all the numerous now existing enticements and inducements to drink could be restricted or removed. So long as the public sale is demanded and allowed by the will of the people, such sale should be in the hands of those whose monetary interest has been as far as practicable removed.

It is most desirable that power should be granted to localities, within defined limits and under carefully considered conditions, to enable them to lessen the inducements to a dangerous indulgence and to promote counteracting agencies to the public-house whereby sobriety might be promoted and intemperance discouraged. To this end the local licensing authorities might well have power to shorten the hours of sale on any or all days, and to insist

[1] See "Report on the Liquor Licensing Laws of Norway". Edinburgh: Scottish Temperance Legislation Board, 1906.

on entire closing on Sundays and on other special days. Much of our most serious industrial drinking might be prevented by securing the later opening of drink-shops in manufacturing districts.

In these democratic days it is scarcely asking too much to urge that a substantial majority of the residents in a locality should have the right to prevent the issue of ordinary gin palace, dram-shop and drinking-bar licences, as distinguished from special hotel and restaurant licences, and ordinary "off" licences.

Clubs require to be brought under more definite control. Drinking clubs for young working girls are doing much harm in certain districts.

It is hardly necessary to refer further to the urgent necessity of extending legislative provisions whereby children, women, and particularly those engaged in the sale of intoxicants, may be more adequately protected. These questions have been dealt with in previous chapters.

It is well here to remind the serious student and far-seeing reformer that while there are numerous insidious influences making for an increase in some of the most detrimental forms of alcoholism in the life of to-day, there are at the same time rapidly increasing inducements to temperance among all sorts and conditions of men and women, and strong forces making for the maintenance of a sober life.

Every agency which is labouring for the physical efficiency, sound mental development and moral uplifting of the people must be welcomed as a means to the end for which this book has been written.

Of this we may rest assured, that no measures can be expected to attain to any permanent advantage in preventing, ameliorating or arresting the drink curse, which neglect to base their action on scientific principles.

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